

A Digester Like No Other

SMARTER. MORE EFFICIENT. REVOLUTIONARY.

DVO | ANAEROBIC
DIGESTERS



*Our vision is to harness valuable nutrients and produce renewable energy from the world's waste streams. Our promise is to design and build digester systems that perform.
Our integrity is not negotiable.*

Renewable Energy

Carbon Neutral

Sustainability

Reliability

Efficiency



Designed with Performance in Mind

DVO, Inc. has long been a leader in the environmental industry. We specialize in environmental engineering, but our hallmark is our patented, Two-Stage Mixed Plug Flow™ anaerobic digestion system. This system has been successfully designed and installed at sites across the nation and the world. DVO is America's largest designer of anaerobic digestion systems, with more than 100 installations in 17 states. DVO digesters process the waste of more than 200,000 dairy cows, as well as from swine and poultry farms, producing more than 75MW of electricity.

Our digesters perform at the high level our customers expect. In addition to unparalleled power generation, our digesters also provide flexibility and cost-effective nutrient management, greatly enhancing crop yields and reducing runoff potential.

There are many varieties of anaerobic digesters on the market today. Yet no one can match the performance, reputation or profitability of a DVO digester.

Simply put, we make a digester like no other.



Anaerobic Digesters – They're Not All The Same

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Anaerobic digestion (AD) is a process that uses naturally occurring microorganisms to transform organic waste into valuable products in a controlled, oxygen-free environment. AD is receiving more accolades as a renewable energy solution, and for many applications it is the best technology to address carbon footprint issues. It solves multiple waste stream management problems and turns waste into not just energy, but also into many other incredibly useful products.

Traditional European digesters have three primary drawbacks.

First, because retention time is not guaranteed, not all of the waste is in the digester long enough for complete digestion to occur. This means both energy and pathogens remain in the waste.

Second, it is difficult to maintain consistent temperature in a mixed digester, since the digester is exposed to extreme heat and cold throughout the year from both internal waste inputs and weather conditions. To function at peak efficiency, a digester needs to maintain a constant temperature of approximately 100 degrees, which is difficult to do with an above-ground, upright tank solution.

Finally, there is the problem of parasitic load. This is the amount of energy produced by the digester system to power the system. It takes a great deal of power to move the machinery in a mixed digester, so there is less power to export or sell.

Not surprisingly, this type of design and technology has often led to unacceptable inefficiencies and high maintenance costs, as well as diminished nutrient-management benefits.



Traditional European above-ground digester construction often leads to inefficiencies, high maintenance costs and diminished nutrient-management benefits.



The right design and process technology is vital. What makes DVO truly unique is our ability to customize and apply sensible, farm-friendly solutions to make AD versatile, perpetual and economically beneficial.

This is how we do it.



Build it underground.

One of the biggest risks and problems with traditional AD installations is that processing tanks are built high above ground, where it is difficult to control temperature consistency.

DVO digesters are built underground, taking advantage of the earth's natural insulating properties to keep microorganisms functioning at their highest levels of efficiency.

DVO has more U.S. anaerobic digester installations than any other company, and is expanding globally.

Our patented mixing system provides for more complete biodegradation of wastes. Our digesters are also less expensive to build and operate, while their low profile keeps eyes focused on the natural landscape rather than a "tankscape."



Use revolutionary technology.

Most digesters use one of two conventional technologies – either the mixed or plug flow process. Both provide passable digestion, but neither optimizes what AD can do.

DVO's patented Two-Stage Mixed Plug Flow™ technology combines and refines the mixed and plug flow processes into one optimal solution that delivers the most reliable and complete digestion on the market. Our system continually mixes a wide range of solids at a carefully controlled temperature, using a first-in, first-out design that guarantees retention time to maximize waste digestion. It's an efficient, continuous, low-maintenance solution that works – and keeps working.

Make it work reliably for a variety of needs.

DVO configures its digesters for each site, each size and each unique waste stream, whether agricultural, municipal or industrial. That flexibility is why we are America's market leader, with more successful digester installations than any other company.

No one else's track record even comes close.

Bankable Benefits

DVO digesters are not only reliable, they are bankable. They provide operators with the ability to generate renewable energy and useful, marketable byproducts.

A DVO digester provides:



RENEWABLE POWER

The DVO digestion process creates biogas which can be harnessed to generate electricity, natural gas or methanol. Renewable compressed natural gas (CNG) can earn credits when used as a transportation fuel.



HEAT

Excess heat from electrical generation can provide heat or cooling for other aspects of an operation, saving money and increasing overall efficiency.



CARBON CREDITS

DVO digesters contain and consume methane to significantly reduce greenhouse gas emissions and earn carbon credits – benefitting both the environment and the bottom line.



RECOVERED NUTRIENTS

DVO can remove up to **90% of phosphorus and 75% of nitrogen ammonia** from organic waste, converting it to a stable, commercial fertilizer. These practical and farm-friendly solutions help farmers limit ammonia emissions and reduce potential runoff.



VERSATILE BIOSOLIDS

Digested organic waste is converted to a nutrient-rich, natural biosolid that can be used as a soil amendment, a premium potting soil and a high-quality animal bedding.



ODOR CONTROL

Conventional management practices involving lagoons and compost piles create uncontrolled odor issues that can disturb neighbors. With a DVO digester, odors are essentially eliminated.



Nutrient Management That Makes Economic Sense

DVO provides sensible solutions to help farmers manage nutrients economically and effectively. While others use expensive means such as centrifuges and high-pressure membranes to generate these benefits, DVO applies its own proprietary mineralization techniques to give the farmer the flexibility to apply nutrient-rich liquids directly to crops throughout the year, maximizing yields – and profits.

Developed in partnership with Regenis, a Ferndale, Washington-based company, our revolutionary suite of solution options are customizable, enabling the farm operation to adjust levels of phosphorus and ammonia removal to the nutrient management needs of each farm.

Our cost-effective nutrient management solutions provide owners additional economic benefits that complement those provided by the digester system.

The Story of Magic Dirt™

A fascinating testament to the efficiency of our digesters is Magic Dirt™, a product produced by Cenergy USA. Introduced in the spring of 2014, Magic Dirt is a blend of nutrient-rich digested manure and other recycled materials that has a pH within the 6-7 range and a guaranteed analysis of 1.15% total N, 0.30% available phosphate and 0.35% soluble potash. More importantly, Magic Dirt outperforms and replaces products like peat moss, the harvest of which is detrimental to the environment.

Only DVO digesters are used to produce Magic Dirt, because only DVO digesters provide a near-complete pathogen kill. DVO's unique design, a combination of a superb mixing system with a guaranteed retention time, ensures all material is fully digested.





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Considering an anaerobic
digestion solution for your farm,
municipality or processing facility?

Start with the best.

In addition to our corporate headquarters
team in Chilton, Wisconsin, DVO has
representatives throughout the U.S. and
the world to consult with you on your
specific project development needs.

Contact us and we'll put you in touch.