

XO₂TM

Oxygen removal systems have become widely popular in the renewable energy sector. These oxygen removal systems provide a complex service inherent in most renewable natural gas projects, oxygen. Oxygen removal systems are critical, pivotal components for the future of gas processing, handling, and management. Newpoint has been producing oxygen removal systems for over 15 years.

Landfills are an excellent source of renewable natural gas (RNG). Sustainably designed landfills are vital to reducing carbon emissions from municipal solid waste. Purified RNG is indistinguishable from regular natural gas and has identical uses. Renewable natural gas is a lower-carbon alternative to natural gas because of the root source. Landfills typically have a service life of around ten years. When sustainably designed, landfills can produce economically viable RNG streams for many years after landfill closure. Negative pressure wells collect the gasses from the landfill; oxygen is an unavoidable by-product of this negative pressure. It is typical to see up to around 2% oxygen concentration in the collected stream. Natural gas pipelines generally require concentrations of less than ten ppm O₂ to meet the specification for injection into the pipeline. Newpoint's XO₂ catalytic oxygen system can reduce oxygen concentrations from 3.3% down to sub ppm levels. The system is thermodynamically efficient and typically requires very little power after initial startup. Landfills are perfect for RNG systems because the collected gas is consistent and predictable; the system can run smoothly and operate around the clock. One advantage of Newpoint's design is that the catalyst is tolerant to halogenated hydrocarbons and chlorinated compounds. These compounds are always in small quantities in landfill gas due to the anaerobic digestion of plastics and other waste.

Biodigesters are another great source of RNG. Instead of landfilling organic waste, utilizing a biodigester is economical and sensible. These digestors have a variable capacity and operate anaerobically. Anaerobic digesters operate in an environment without oxygen and produce RNG.

Newpoint Gas, LLC

Innovative Oil & Gas Solutions

However, most anaerobic biodigesters have some incidental ingress of oxygen. This ingress is accidental and undesired. Most facilities will first try to eliminate oxygen ingress at the source, but most fail to meet the oxygen requirements of the extremely low pipeline specification. Newpoint always recommends including an oxygen removal system for biodigesters to ensure that the gas can be sold and injected into the pipeline. Money is lost when a facility is built without an oxygen removal system, and sales are halted because the producer cannot meet the oxygen specification. The only way to solve the issue is to find the source of oxygen ingress; this can be like finding a needle in a haystack. One of the challenges of designing an oxygen removal system for biodigesters is the variable flow rate and contents of the RNG stream. Some systems are relatively constant, but others require system variability, which adds to the costs.

One of the most common locations for biodigesters is agricultural facilities or livestock facilities due to the amount of organic waste disposal required. Therefore, it is usually always beneficial at these types of sites. The owner of the agriculture center can sell the RNG at a premium and sell the digestate of the bio-digester as fertilizer. Using a bio-digester allows for the use of RNG that would otherwise have gone into the atmosphere.

Overall, Newpoint's XO₂ system is a guaranteed and economical way to eliminate oxygen from RNG streams; the robust catalyst is the best in the industry and consistently demonstrates its superiority repeatedly. Newpoint is ready and eager to discuss your needs and requirements for your next RNG project.

For more information, please email Info@newpointgas.com with any questions or comments.