

Installation of Biogas RNG treatment plant on dairy farm in US Midwest



Goltens Green Technologies performs successful installation of biogas upgrading plant on a dairy farm in Midwest, USA

The Biogas RNG market in North America is currently experiencing unprecedented growth due to favorable policies and its environmental benefits. Goltens Worldwide's green division, Goltens Green Technologies, has responded fast to this expanding demand, undertaking several RNG projects during 2022 and 2023, including on dairy farms.

PROJECT SCOPE

The Goltens team comprised a professional project manager and three multi-skilled welders who were responsible for all on-site welding, mechanical installation, and commercial insulation of the piping. The comprehensive project scope included tackling the engineering challenge of laying foundations for the upgrading units and supplying crane services to set the gas upgrader containers and H₂S (hydrogen sulphide removal) towers, positioning them within half-an-inch of the required elevation. Dimensionally critical targets were very precisely laid out to ensure the pipework would fit. Goltens' team ensured all work performed was within accepted tolerances and to the strict time deadline.

Goltens fabricated all of the 304- and 316-grade stainless-steel pipework required by the design connecting the H₂S towers to the processing containers. All metalwork was welded by our class-certified 6G welders. Each of the fabricated pipes went through rigorous pressure testing before final installation and fitting. Once the system was installed, a 5% X-ray test was performed on all of the welds for quality control.

The Goltens team also installed all the analyzer mechanical tubing with compression fittings in 316-grade stainless steel and HDPE (high-density polyethylene). On completion of the mechanical works, Goltens arranged for technical teams to install the insulation, who worked continuously for two weeks to insulate the entire pipe run before completion of the installation.

FINAL TESTING

The entire system was successfully pressure-tested prior to completion and certification of the project. Once completed, Goltens again pressure-tested the entire system with nitrogen, testing the RNG component for 30 minutes at 10psi.

Goltens and contractors then signed off on acceptance by the client. The installations were completed on time, on budget, and were successfully commissioned.

The client's Site Engineer/ Project Manager commented: "In the past, it has been a challenge to find quality contractors to perform the installs. The Goltens team brought everything to the table that we were looking for. Goltens workmanship is amazing! They performed flawless work, were professional, dedicated, and conscientious of all our requirements. We look forward to continuing success using Goltens as a partner."

As dairy farm RNG projects continue to gain momentum in North America, Goltens is committed to expanding its services in this space, solidifying relationships and partnerships with manufacturers, EPC firms, and general contractors to provide robust, high-quality solutions for customers.



NEWLY INSTALLED BIOGAS TREATMENT PLANT



H₂S AND STAINLESS-STEEL PIPE RUN



PRESSURE-TESTING OF THE ENTIRE SYSTEM

BIOGAS IN BRIEF

Biogas results from the anaerobic digestion process of organic animal waste. After the waste is fermented in a biogas digester, the resulting gas is upgraded to pipeline quality suitable for commercial use. The upgraded gas can either be compressed in portable trailers or injected directly into a natural gas pipeline for sale. The application of cow manure digestion on dairy farms has shown particularly brisk activity, especially in the US Upper Midwest.