VoltaGrid

Case Study

Flare Gas to Power for an Oil & Gas Producer in New Mexico

VoltaGrid partnered with a leading oil and gas producer in New Mexico to implement an innovative solution for capturing flare gas and converting it into power at their production site. This project focuses on eliminating gas flaring, optimizing fuel use, and providing power for critical operations, resulting in reduced operational costs and improved sustainability.

THE CHALLENGE

The project utilizes VoltaGrid's advanced technology, including three motor-driven boost compressors with all-electric motors that manage gas compression to improve fuel quality; three mobile refrigeration units (MRUs) that condition gas for use in our generators and for compressed natural gas (CNG) storage in trailers; and a VoltaGrid turbine. The turbine's Gen 1 skid filters and heats the gas before it enters the turbine, which currently generates 2.5 to 3 MW of power and has the capability to produce up to 5 MW, with only 50–60% of its capacity utilized at any given time.

The turbine powers the entire site, with electricity transformed from 13.8 kV to 480 volts for the MRUs and other equipment. Conditioned gas from the MRUs fuels the turbine, while excess gas is compressed into CNG trailers for distribution through VoltaGrid's virtual pipeline solution. When conditioning exceeds consumption, excess gas is returned to the customer's gas line to help maintain pipeline limits. The system includes sufficient compression and refrigeration capacity to provide redundancy and ensure uninterrupted operations.

THE SOLUTION

VoltaGrid is evaluating additional ways to utilize the turbine's power to improve the project's economic benefits by maximizing power use across the customer's operations. VoltaGrid also captures and conditions the customer's flare gas as a substitute for diesel in fracking operations.

By sending conditioned gas to flow lines, the system enables remote frack sites to run on the producer's own gas, eliminating the need for new infrastructure and reducing fuel costs. Originally installed in December of the previous year, the system was relocated to a new well pad after production from the original pad declined. This flexible deployment enables continued power support, peak shaving, and fuel substitution across multiple well sites.

THE RESULTS

The project eliminates flaring by capturing flare gas, helping the customer meet environmental requirements while reducing emissions. It also delivers significant cost savings by replacing diesel with the customer's own gas as a fuel source. The system can be easily relocated and scaled across well sites, providing continuous power and fuel support wherever needed.

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