CASE STUDY – SE OKC RENEWABLE NATURAL GAS FACILITY DESIGN

ESI provided full process, mechanical, electrical, and controls engineering services for a 3,000scfm (inlet) landfill gas-to-pipeline RNG facility. The facility utilizes a membrane based CO2 removal system integrated with a PSA based nitrogen rejection system. ESI provided the complete facility mechanical design in 3D while providing detailed point-to-point electrical plans.

UNIQUE CHALLENGE
The project required seamless integration (mechanical, electrical, and controls) of multiple technologies supplied by multiple equipment vendors to produce a cohesive operating facility designed to maximize facility up-time. To streamline the integration of the facility, ESI provided a comprehensive set of over 350 drawings that included: spool-by-spool mechanical pipe fabrication drawings, point-to-point control termination drawings, and detailed pipe support drawings. This level of detail represents significant savings to clients in construction costs and is only achieved through ESI's advanced 3D design capabilities and meticulous attention to detail.

PROJECT OVERVIEW
LOCATION:
Republic Services SE OKC Landfill
Oklahoma City, Oklahoma

OWNER:
Aria Energy

DESIGN COMPLETION:
October 2017

EQUIPMENT:
Air Liquide Membranes
Guild PSA N2 Rejection System
Glauber/Sullivan Compression

CAPACITY:
3,000scfm raw LFG inlet

SCOPE OF WORK:
• Process Design
• Mechanical Design
• Electrical Design
• Controls Design Assistance
• Advanced 3D Facility Design
• Spool-by-Spool Piping Drawings
• Point-to-Point Controls Drawings
• Construction Permit Assistance
• Facility HAZOP Review
• Construction Engineering Assistance
RENEWABLE NATURAL GAS EXPERTS

The completion of the SE OKC RNG Facility design marks the 4th successful project between ESI and Aria. A 5th project is scheduled for completion in mid-2018 and more are in the late stages of development. As with each prior project, ESI and Aria have taken the safety and performance of the facility to the industry's cutting edge.

As the largest developer of renewable natural gas projects in the United States, Aria relies on ESI to play a key role in the engineering and integration of their facilities. ESI's technical expertise in gas separation of biofuels includes experience and understanding with a wide variety of technologies including: membrane, PSA, TSA, amine, water wash, biological scavengers, bulk media removal, and more. As a true third party engineer, ESI is technology agnostic but maintains relationships with most of the major RNG technology suppliers in the industry. ESI is committed to providing clients with the best RNG solution for their project needs.