



COMBINED HEAT AND POWER

PROJECT SUMMARY

Fagen, Inc. and I.C. Thomasson have partnered to provide Combined Heat and Power (CHP) additions to our customers. CHP systems can increase overall energy efficiency while reducing overall energy costs. Some examples of industries that can benefit from CHP include:

- Ethanol
- Industrial processing
- Food processing
- Healthcare
- Municipal
- Higher education
- Metals

These projects can provide several benefits to the facility depending on operational goals and can be specifically designed to meet the needs of the facility. Each facility may have several factors to consider when choosing CHP and may include the following:

- Reducing or offsetting reliance from on grid/utility power sources and increasing plant resiliency
- Reducing carbon footprint and lowering carbon intensity score
- Replacing aging steam and power producing equipment

PROVEN EXPERIENCE

FAGEN, INC.

Siouxland Ethanol CHP

Siouxland Ethanol was looking for a creative way to reduce their plant's Carbon Intensity Score and improve their overall operating efficiency. Fagen, Inc. provided an EPC solution supplying a 7.3 MW Solar Taurus 70 combustion turbine to supply the plant's electrical power and a Rentech Heat Recovery Steam Generator to provide the process steam.

Blue Flint Ethanol CHP

Midwest AgEnergy was in need of steam supply as the source they had relied on since opening was contemplating shutting down so it was a fitting time to take advantage of a Combined Heat and Power project. The CHP project's steam supply will come from two 140,000 lb/hr Rentech boilers that will provide steam to the 4.25 mega watt Air Clean Steam Turbine Generator package, while having the option to bypass the turbine and provide steam to the ethanol facility direct. This project ensured the continued operation at the facility while offsetting high utility costs and improving Midwest AgEnergy's Carbon Intensity Score.



I.C. THOMASSON

Ethanol Plants

- Blue Flint Ethanol, Underwood, ND (5MW / 140,000pph)
- Siouxland Ethanol, Jackson, NE (7.5MW / 135,000pph)
- Andersons Albion Ethanol, Albion, MI (7MW / 135,000pph)

Industrial

- Confidential Industrial Client, TN (15MW / 320,000pph)
- Duke Energy, West Lafayette, IN (15.5MW / 150,000pph)
- Milliken, Blacksburg, SC (14MW / 200,000pph)
- Shaw Industries, Columbia, SC (14MW / 80,000pph)
- Confidential Industrial Client, East Asia (4MW / 80,000pph)
- 82nd Airborne, Ft. Bragg, NC (5MW / 80,000pph)

Higher Education

- Vanderbilt University, Nashville, TN (18.5MW / 300,000pph)
- Penn State University, State College, PA (7MW / 100,000pph)
- Middle Tennessee State University, Murfreesboro, TN (5MW / 80,000pph)
- University of Tennessee, Knoxville, TN (5MW / 100,000pph)
- Clemson University, Clemson, SC (5MW / 75,000pph)
- Mississippi State University, Starkville, MS (26MW)

Hospitality

- Gaylord Opryland Resort, Nashville, TN (5MW / 80,000pph)
- Turning Stone Casino and Resort, Verona, NY (5MW / 75,000pph)

