



## OHIO NORTHERN UNIVERSITY

ADA, OH

Construction of a 2 MW solar array that supplies electricity to Ohio Northern University was completed in September of 2016 and commissioned, January of 2017. Because ONU was so pleased with the project success and the array's output, the university again contracted with GEM Energy to construct an additional 1 MW solar field adjacent to the current site. The new array was commissioned in the spring of 2018.

GEM Energy secured the project financing under a negotiated Power Purchase Agreement (PPA) structure, and designed, constructed, and manages all ongoing operations and maintenance of the solar array. Under the 25-year PPA, ONU will benefit with a no-out-of-pocket solution where no university capital is required for the array's construction and maintenance. Project specifics include:

- 12 acre ground array: Phase I - 2 MW; Phase II - 1 MW.
- The solar field generates approximately 15 percent of ONU's annual electricity needs.
- ONU will include the solar array in its renewable energy curriculum. The program is led by GEM Energy and includes pilot student teams.



### What ONU Leaders Say...

*"Our board did not want to finance solar using endowment funds. The PPA solution allowed us to lock in our power rate for 25 years, produce 15% of our electricity needs and not use annual/capital or endowment funds. With GEM Energy for the construction, as well as ongoing operations and maintenance of the array, we felt secure that we had a partner who would be with us for the long haul."*



## ANN ARBOR, MICHIGAN VETERANS ADMINISTRATION MEDICAL CENTER

Initially an equipment-only sale through GEM Energy, this Capstone C1000 microturbine, provides heat, power and steam to Ann Arbor's 1.1 million-square-foot VA Hospital.

A couple years after the installation was completed by a general contracting firm, GEM Energy was contacted by the VA to help improve the CHP system's run-time and efficiency.

GEM Energy coordinated with the VA to get a Factory Protection Plan (FPP) in place enabling us to work directly with facility management on the Capstone equipment. After a short period of time, our skilled in-house technicians had the system running at full capacity and all service/repairs updated. The C1000 is now in continuous use and is serviced and maintained under the FPP so that the VA experiences no unexpected downtime.

The system is capable of operating in both grid-connected and stand-alone mode producing 1MW of electrical output. It's integrated recovery steam generator provides over 2,258 pounds of steam per hour at 75 PSIG.



"I've really enjoyed working with each of you. I appreciate the vast expertise, unending dedication and humor-filled, can-do spirit that you've continually brought to and shown throughout this project."

Jan Shahan, Contract Specialist  
Veteran's Health Administration



The Hylant Building has been an integral part of the downtown Toledo skyline since it was built in 1959. The 15-story building has represented its city both as a center of business, and as a symbol of Toledo's heritage, featuring more than 155,000 square feet of glass, one of Northwest Ohio's signature products.

With a downtown resurgence underway nearly 60 years later, reinvestment was in order for the more than 235,000-square-foot office facility.

In 2017, the Hylant building owners called on the experience and expertise of GEM Energy and the other Rudolph Libbe Group companies to handle multiple construction and energy projects as well as ongoing maintenance and tenant management. Our holistic, multi-discipline team worked closely with Hylant to develop a plan for reshaping the building's future while drawing on its past as a landmark for Toledo-area businesses.

### **SOLVING FACILITY, HVAC AND ENERGY MANAGEMENT ISSUES**

The Hylant Building's HVAC system was once a highlight of the property. A 1960 article in the *Toledo Blade* touted its ability to handle 200,000 cubic feet of air per minute, in peak operating periods.

But by the time GEM Energy took over management of the building, the HVAC system and other facility infrastructure, such as lighting and building automation, were significantly outdated, leading to extremely inefficient and costly operations.

GEM Energy developed and implemented an energy solution plan, including improvements for building automation, HVAC, lighting, and utility procurement. Budgets for primary infrastructure were supplemented via PACE financing and First Energy utility incentives.

Hylant is realizing savings of more than \$170,000 in annual energy related operating costs, which is a 31% decrease in utility expense and an 11% operating expense reduction. Hylant was also able to reduce its non-energy operating expenses by 3.3%. As part of continuous improvement, further energy projects are being evaluated and implemented when deemed beneficial. In addition to decreasing energy expenses, the energy management efforts to-date have contributed to greater budget certainty and risk mitigation due to less exposure to volatile energy markets.



**In response to the project criteria and building challenges, the Rudolph Libbe Group offered a comprehensive approach to addressing these issues, based on four key pillars:**

- 1. FACILITY AND HVAC EQUIPMENT MANAGEMENT**
- 2. ENERGY MANAGEMENT**
- 3. TENANT MANAGEMENT**
- 4. CONSTRUCTION SERVICES**

By adhering to these four pillars, a comprehensive plan was developed to update and improve the physical facility and reduce the Hylant Building's cost of operation.

The comprehensive approach meant all of these benefits came to bear on the project nearly simultaneously, a fact both recognized and appreciated by Hylant's Senior Operations Analyst, who said:

“ **GEM Energy and the Rudolph Libbe Group have done a great job for us, with not only the management side of the building, but the mechanical aspects, the upgrades, the leasing, the accounting, and also energy aspects. They are very proactive with energy procurement and efficiency projects. We've had positive results from the work they've done and couldn't be happier.** ”

**GEM Energy developed and implemented a comprehensive energy solution plan, including improvements for building automation, HVAC, lighting, and energy procurement.** The team also helped review PACE financing options and secure First Energy utility incentives. After one year of managing the building, Hylant is realizing a total savings of \$171,700 in energy related operating costs, this equates to a 31% decrease in utility expense and an 11% operating expense reduction. Hylant was also able to reduce its non-energy operating expenses by 3.3%.

As part of continuous improvement, further energy projects are always being evaluated and implemented when deemed beneficial. In addition to decreasing energy expenses, the energy management efforts to-date have contributed to greater budget certainty and risk mitigation due to less exposure to volatile energy markets.

While working closely with the Hylant Operations team, GEM Energy was also able to mitigate excess costs in other areas including:

- Reviewed all supplier arrangements and optimized scope of services; negotiated energy supply, security, elevator maintenance, paper products, cleaning, trash, landscaping and snow removal to find the best value
- Corrected utility and cell phone billing errors.
- Eliminated duplicate maintenance contracts.
- Increased supplier accountability.

After just a year under RLG's management, Hylant realized:

- **A total savings of more than \$171,000 in energy-related operating costs;**
- **A decrease of 31% in its energy-related operating costs; and**
- **An 11% operating expense reduction.**

And through benchmarking established via an energy audit, overall energy use at the Hylant Building was **expected to decrease more than 21% in the same time period.**

