

Ohio State University

A New Model for Energy Innovation

LOCATION: Columbus, Ohio

CUSTOMER CHALLENGE:
Upgrade energy infrastructure and drive sustainability innovation

SOLUTION:
50-year integrated solutions agreement with Ohio State Energy Partners (OSEP), a public-private partnership including ENGIE North America and Axium Infrastructure.

BENEFITS:

- 12% improvement in energy efficiency realized in just four years, halfway to a total goal of 25%
- \$150 million in funding to support the various academic, research, and community interests of Ohio State University
- Key performance indicators met or exceeded across electricity, gas, steam, and water utilities
- 18 new and 22 existing energy capital improvement projects in 2020



“Through the partnership, we’re working on new ways of delivering power and heat, reducing the university’s carbon footprint, and supporting the academic teaching and research that will underpin the next generation of energy innovation.”

– Bill King, CEO, Ohio State Energy Partners

Founded in 1870, The Ohio State University is one of the top 20 public universities in the United States and has long been associated with learning excellence. The university is vast, with facilities spread across nearly 2,000 acres and four regional campuses. Ohio State’s flagship Columbus campus is one of the largest of any public university or college in the United States.

Leading in Sustainability

Ohio State is on a mission to become an international pioneer in sustainability. As the university describes on its website, this includes creating a campus that is “timeless, maintainable, and flexible; incorporating responsible use of fiscal, environmental, and human resources; and having minimal environmental impact.” As a core element of its sustainability agenda, Ohio State has set stewardship goals for itself that include:

- Improving energy efficiency
- Achieving carbon neutrality by 2050
- Nurturing the next generation of sustainable energy leaders
- Serving as an incubator for sustainable energy innovations

A Unique Partnership

To meet its goals, in 2017 Ohio State entered into an innovative 50-year integrated solutions agreement with Ohio State Energy Partners (OSEP), a public-private partnership including ENGIE North America and Axium Infrastructure. This partnership addresses the university’s sustainability and energy operations goals and funds important academic initiatives. The OSEP agreement is driving change across five crucial areas:

- 1. Operations.** ENGIE is responsible for operating the systems that power, heat, and cool Ohio State’s Columbus campus under a 50-year lease of the university’s energy assets. Through its performance guarantees, ENGIE assumes responsibility for the resiliency and reliability of these systems, including uptime commitments from 99.9% for steam and up to 99.996% for electricity.
- 2. Sustainability.** In collaboration with Ohio State, OSEP develops and implements energy conservation projects, which help the university to reduce its carbon footprint. Specifically, within the first 10 years of the partnership, OSEP has committed to improving energy efficiency on the Columbus Campus by 25% or more.

3. Supply. OSEP is working with Ohio State to enhance its effectiveness in the procurement process for electricity, natural gas, and other energy sources.

4. Academic collaboration. In addition to a \$1.015 billion upfront payment to the university, OSEP will fund and carry out a commitment of \$150 million to support various academic, research, and community interests. Among these projects is an Energy Advancement and Innovation Center. The center will enable faculty members, students, alumni, researchers, local entrepreneurs, and industry experts to work together on the next generation of smart energy systems, renewable energy, and green mobility solutions. In addition to this project, the partnership also supports grants, scholarships, and internships at Ohio State.

5. Financing: In exchange for operating services and implementing energy conservation measures, Ohio State pays OSEP an annual utility fee. This fee includes three elements: an operating fee to cover costs (starting at \$9.2 million based on a three-year average of university costs with adjustments throughout the concession based on actual operating costs), a fixed fee that starts at \$45 million and grows 1.5% a year, and a variable fee directly tied to the financial return of capital investments made by OSEP at the university.

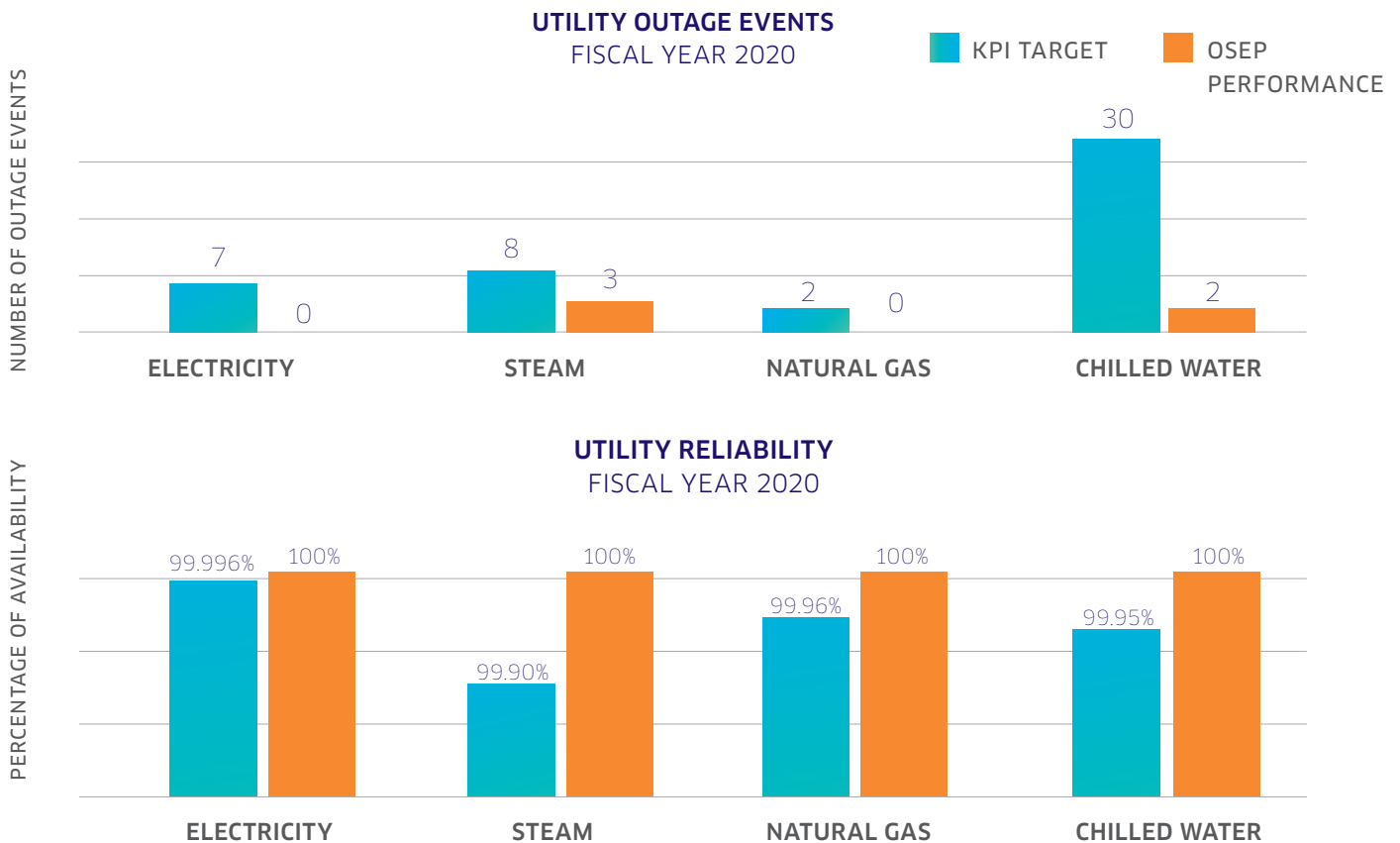
Smarter, More Efficient Energy

Now four years into the project, the university is benefitting from significant improvements in sustainability, beginning with smart metering, lighting upgrades, and various facilities' utility system upgrades. The progress of these energy projects is ahead of schedule, with nearly half of the 25% efficiency target goal already reached.

The collaborative helps make sustainability goals happen by expediting decarbonization. Performance metrics ensure that capital initiatives and operational decision-making are on track to meet these goals. For example, OSEP began a transformation of the 485-building Columbus campus with the installation of nearly 1,000 smart meters, approval of more than \$190 million in energy efficiency measures, and implementation of a central analytics and control platform.

Throughout, OSEP has met or exceeded its key performance indicators across electricity, gas, steam, and water utilities (see chart below).

Efficiency Measures and Key Performance Indicators (KPIs)



In addition, the partnership is delivering value beyond its original contractual agreement: The U.S. Department of Energy (DOE) selected Ohio State as one of 10 sites to transform the way communities use energy. As part of the effort, Ohio State received a \$4.2 million DOE grant to lead a project that will optimize energy consumption within the community. “This interdisciplinary project will give Ohio State and Ohio State Energy Partners an opportunity to pursue boundary-pushing energy and sustainability research and innovations and pave the way for the integration of renewable energy sources into our portfolio, a key part of Ohio State’s 2050 carbon neutrality goal,” says Kristina M. Johnson, President of Ohio State University.

OSEP has also taken significant steps forward in the construction of new facilities. In 2020, 18 new and 22 existing energy capital improvement projects were worked on. These projects include starting construction of Ohio State’s new Combined Heat and Power plant and associated District Heating and Cooling network (operation will commence no later than 2023). In addition, ground broke on the university’s Energy Advancement and Innovation Center. By providing the support and resources necessary to become commercially successful, the center will help promising projects find a route to market.



Sustainability at the Heart of Learning

Supporting academic excellence is a key part of the OSEP program. As Bill King, CEO of OSEP explains: “OSEP was established to deliver more than energy management. Through the partnership, we’re working on new ways of delivering power and heat, reducing the university’s carbon footprint, and supporting the academic teaching and research that will underpin the next generation of energy innovation.”

OSEP is delivering a range of academic collaboration programs to benefit Ohio State students and faculty. These include an annual opportunity for 10 students to intern with OSEP to support, design, and develop capital projects to drive campus efficiency. In addition, students are encouraged to participate in sustainability-themed challenges and competitions. For example, Residence Hall Energy Competitions give prizes to whichever dorm conserves the most amount of energy.

OSEP has also co-sponsored West Fest, an interactive community event that highlights how Ohio State researchers and community partners are working to protect the environment, improve natural resource use, and enhance people’s daily lives.

The Power of Partnership

Throughout the project, Ohio State has benefitted from ENGIE’s significant experience and scale, which enables it to meet its energy and utility commitments. King comments: “OSEP is an excellent example of the partnered approach we take with clients. All components of OSEP’s sustainable energy projects are developed in collaboration with the university, including the important academic elements.”

“This interdisciplinary project [stemming from the DOE grant] will give Ohio State and Ohio State Energy Partners an opportunity to pursue boundary-pushing energy and sustainability research and innovations and pave the way for the integration of renewable energy sources into our portfolio, a key part of Ohio State’s 2050 carbon neutrality goal.”

–Kristina M. Johnson, *President, Ohio State University*
