THE OHIO STATE UNIVERSITY

Comprehensive Energy Management Project

University Senate

April 4, 2017

Why we are considering this partnership

SUSTAINABILITY

- Our goal is 25% energy efficiency improvement within 10 years
- Campus-wide upgrades would cost an estimated $250 million
- A dedicated funding stream would propel progress (avoid redirecting capital from other academic and strategic priorities)

ACADEMIC MISSION

- Substantial new resources for teaching, learning and research would support our strategic priorities
- Campus requested support of internships, scholarships and research
- A partnership could make Ohio State a top university for sustainability and energy research

Four elements of comprehensive approach

SUSTAINABILITY: Install improvements to improve energy efficiency 25% campus-wide within 10 years

OPERATIONS: Manage systems

- Electricity
- Geothermal
- Natural Gas
- Steam/Heating
- Chilled water/cooling

SUPPLY: Assist Ohio State in buying the type of energy we want on the best possible terms

ACADEMIC COLLABORATION: Support teaching, learning and research, particularly in energy and sustainability

A three-stage, deliberative approach

Evaluation of Comprehensive Energy Management Project

Request for Qualifications ("RFQ") Phase (February 2015–May 2015)	➢ Reached out to over 140 parties to gauge interest ➢ 44 responded with information about their qualifications ➢ University approved 40 to continue to the RFI phase	**ENGAGEMENT HIGHLIGHTS** ➢ Input from three advisory committees (including review of RFP responses): • Faculty Advisors Group • Council on the Physical Environment • President and Provost's Council on Sustainability ➢ Met with 30+ campus organizations ➢ Held 3 public forums ➢ Sent 9 campus-wide updates ➢ Maintained website
Request for Information ("RFI") Phase (May 2015–January 2016)	➢ Many of the 40 participants joined together to form comprehensive teams, as required by the RFI ➢ 10 teams submitted indicative proposals ➢ University approved six teams to continue to RFP	
Request for Proposals ("RFP") Phase (February 2017 – April 2017)	➢ Three teams submitted bids and accepted university's requirements for service ➢ Each review group (including advisory groups of students, faculty and staff) rated ENGIE-Axium as top proposal ➢ University leaders to recommend approval to the Board of Trustees on April 6-7	

Three advisory groups throughout process

- **President and Provost's Council on Sustainability (PPCS)**
  - Developed university's sustainability goals (energy and other issues)
  - Recommended elements of academic collaboration proposal
- **Faculty Advisory Group (includes experts from related fields)**
  - Provided technical review in all areas
  - Helped to shape the Request for Proposals
- **Council on the Physical Environment (COPE)**
  - Reviewed human resource elements

How we developed our recommendation

- Bids ranked by the three advisory groups and the university
- Each element of the proposal was evaluated
  - Academic collaboration
  - Technical
  - Human resources
  - Financial
- Each review group came to same conclusion on top bid
- Top bid offers required benefits to sustainability and academic mission

Overview of ENGIE-Axium's proposal

ACADEMIC COLLABORATION

SUSTAINABILITY

OPERATIONS

SUPPLY

- Largest investment in Ohio State's academic mission
  - $1.165 billion for access, affordability, excellence and sustainability
- Unprecedented energy efficiency program to modernize our campus
  - 25 percent improvement in energy efficiency within 10 years
- Establish Ohio State as an international leader in sustainability
  - New research center and other academic collaborations

Investments in our academic mission

Upfront payment for 50-year agreement	$1.015 billion
Academic collaboration	$150 million
Total value to the university	**$1.165 billion**

Upfront payment
to support strategic plan

- Student financial aid
- Compensation enhancements to support competitiveness with academic peers
- Classrooms, research labs and performance and arts spaces
- Fund to enhance sustainability
- Other strategic initiatives

Collaboration opportunities
based on community input

- $50 million for major center for energy research and technology commercialization
- $25 million for financial aid (undergraduate, graduate and professional)
- 500 internships ($5 million)
- $20 million for sustainability curriculum, staff development
- $9.5 million for five faculty positions
- $40.5 million for philanthropy

Energy Advancement and Innovation Center

- $50 million hub for research and technology incubation
  - 60,000-square-foot building, based on or near campus
  - Funding also includes operating costs and seed money for research
- Collaboration between Ohio State, ENGIE and industry experts on
  - Next generation of smart energy systems
  - Renewable energy
  - Green mobility
- First ENGIE research hub in North America; would be 12th globally

ENGIE-Axium's operating responsibilities

SUSTAINABILITY

- Carry out energy conservation measures to meet goal
- Provide capital funding for approved projects (university would retain approval rights)

OPERATIONS

- Operate systems that power, heat and cool campus
- Required to meet or exceed our performance standards
- Perform and provide capital funding for improvements (university would retain approval rights)

SUPPLY

- Support our procurement of electricity and natural gas
- Ohio State would continue to buy directly from providers (and determine mix of energy sources and fuels)

Oversight, flexibility and end of contract

- Key performance indicators in contract will be tracked annually
  - Includes operations and progress on sustainability
  - Operator would face penalties up to removal for non-performance
- University to form Energy Advisory Committee
  - To review capital projects and approve annual operating budget
  - To provide input on proposed changes to performance standards
- Structure allows new energy technologies to be trialed and implemented
- Assets revert back to University at contract conclusion

Background on ENGIE-Axium

- Companies would operate new entity: Ohio State Energy Partners

ENGIE
OPERATOR/EQUITY INVESTOR

- Supplies electricity to 14 deregulated U.S. markets (states)
- Manages 250 district heating and cooling energy systems globally
- Serves approximately 150 higher education and health-care facilities
- Clients include the University of Maryland, where ENGIE has managed the campus power plant for almost 20 years
- On the Dow Jones Sustainability World Index and the Dow Jones Sustainability Europe Index

Axium
EQUITY INVESTOR

- Manages two infrastructure funds totaling over $1.5 billion in assets and $1 billion in managed co-investments
- Focused on long-term returns; uses buy-and-hold investments in core infrastructure assets
- Actively invests in renewable energy, with interests in over 2.5 GW of wind, solar, and hydroelectric power generation across North America

Ohio State's fee structure

- Total cost of energy designed to be consistent with current cost structure
- **Fixed fee:** Starts at $45 million a year, 1.5% annual increase for inflation
- **Operating fee:** Starts at about $9.2 million
  - Annual adjustment based on actual costs of the operation, as approved through the budget process
- **Variable fee:** Would be based on ENGIE-Axium's investments in energy conservation measures and other capital improvements
  - Funding to be a 50/50 split of debt and equity
    - Initial return on equity = 9.35%
    - Initial cost of debt = 3.691%

Recap

	Current state	With CEMP
High standards for energy operations	✓	✓
University determines sustainability goals	✓	✓
University determines mix of energy (including renewables)	✓	✓
Investments in energy system affect university costs	✓	✓
Major investment ($1.015 billion) in academic mission (student aid, faculty/staff support, capital projects, other)		✓
Major investment ($150 million) in academic collaboration (research hub, scholarships, internships, faculty positions, sustainability fund, university philanthropy)		✓
Major energy efficiency program with dedicated funding		✓

Discussion

Presentation posted at go.osu.edu/CEMP