THE OHIO STATE UNIVERSITY

ENGIE

Comprehensive Energy Management
"A New Model"

Case Study Ohio State University and Ohio State Energy Partners' 50-year agreement for comprehensive energy management

Objective Present a summary of:

- Project development and execution
- Structure and operational scope
- Risks and benefits
- Perspectives on the keys to success in the process and project

Conclusion This new model (and many possible derivations of this model) for energy management can present a win/win arrangement for campuses and vendors

The Ohio State University & Ohio State Energy Partners

Footprint & Energy Profile

- 490 buildings on ≈ 2,000 acres
- 100,000 people daily
- 1,300 hospital beds
- 14,000+ student residence beds
- 3 stadiums = 120,000 seats
- Elect., gas, steam, chilled water
- 3 high voltage substations
- 110 MW peak demand
- 2.9 million MMBtu's of steam
- $115 million annual spend
- High reliability requirements

The Ohio State University & Ohio State Energy Partners

The IDEA

Comprehensive Energy Management

Achieving optimization through an enterprise-wide systems approach to energy

- **Systems operations management**
  - Operate, maintain, and expand utility systems with a constant focus on the impacts and benefits to the enterprise
  - One vendor with extensive relevant expertise, scale, and reach
- **Energy Efficiency management**
  - Overcome a one-building-at-a-time approach
- **Financial resource management**
  - Enables redirection of existing financial resources (debt capacity) to support its core academic missions

The Ohio State University & Ohio State Energy Partners

Project Development

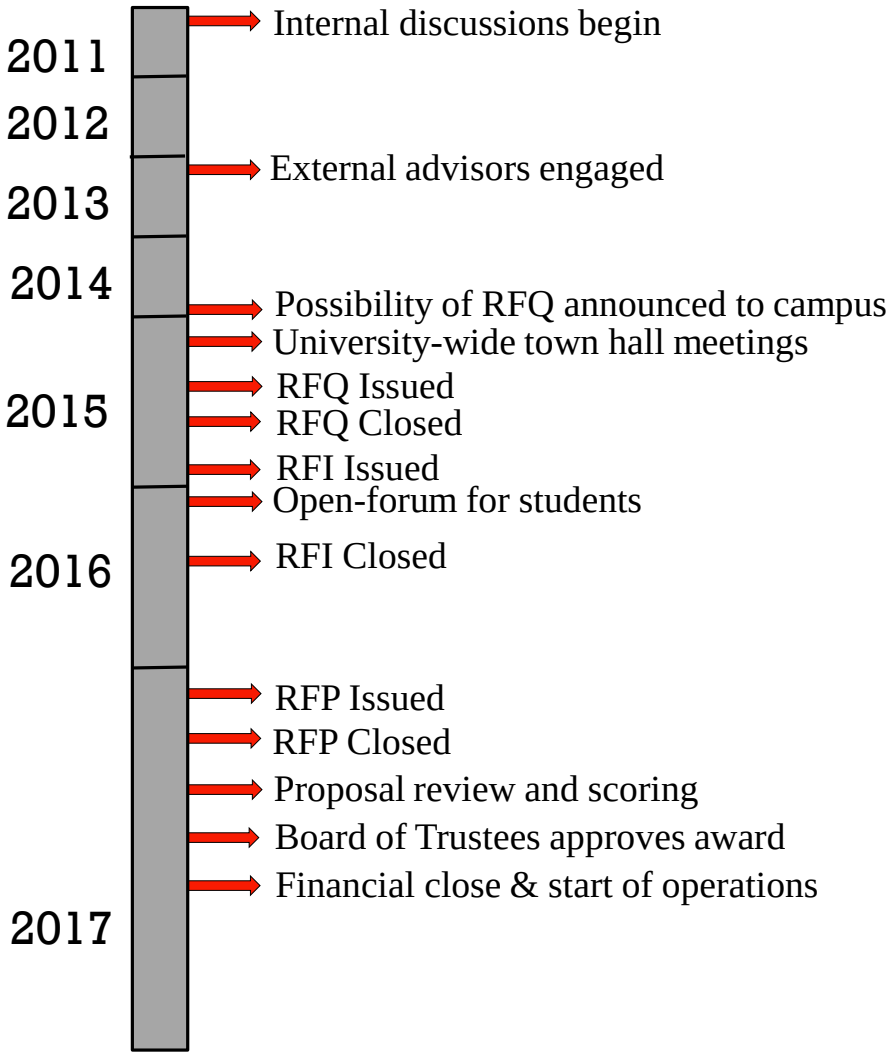
Collaboration from Concept to Delivery

Rebuilding your ship while at sea under full sail.

- **Prior to issuing RFQ**
  - Extensive internal university discussion
  - Engaged external financial and legal advisors
  - Open campus-wide meetings to discuss the project
  - 3 internal advisory groups
- **From RFQ to RFI to RFP**
  - Frequent conversations with bidders
  - Contacted 100+ companies for RFQ
  - Multiple meetings with firms during the RFI phase
  - Open Q&A log – 1000+ asked and answered questions
  - Multiple meetings with firms during the RFI phase

The Ohio State University & Ohio State Energy Partners

Project Timeline



Sometimes, not knowing the length of the road before you, is what makes the journey seem possible.

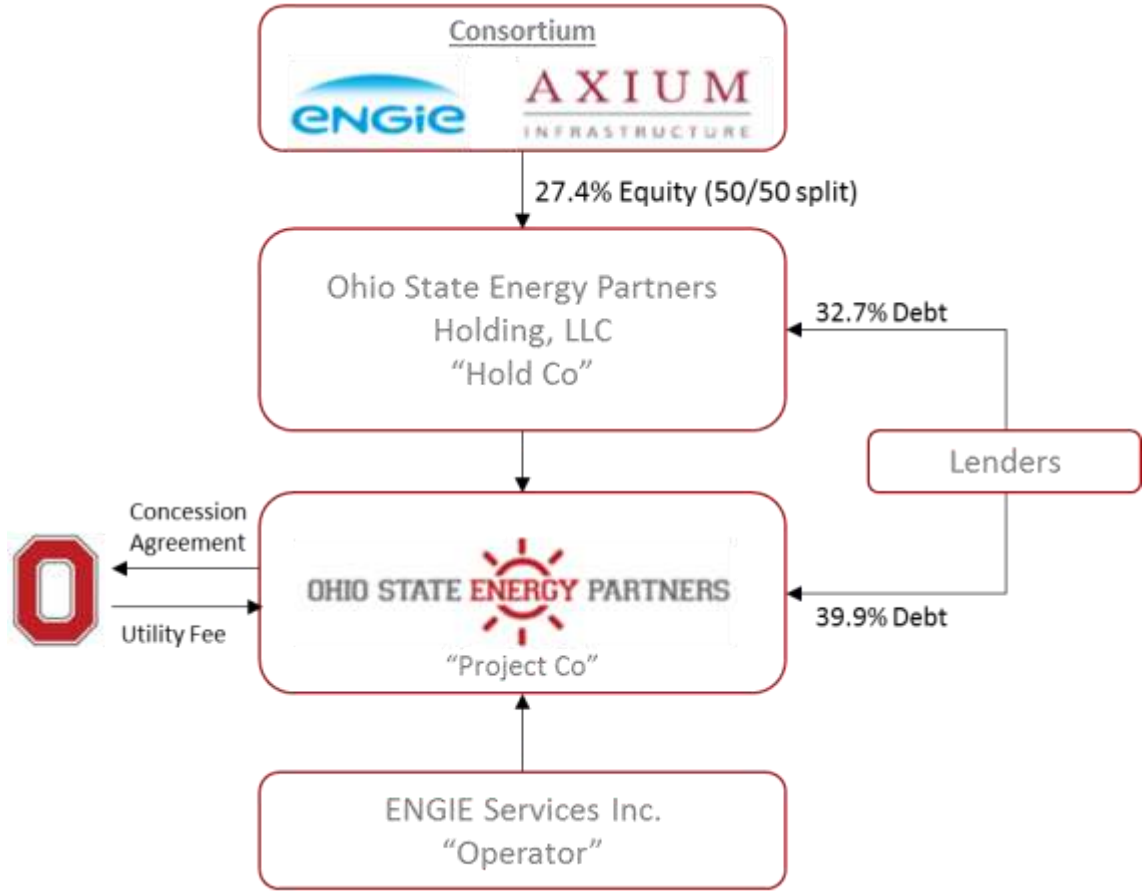
- 100 + companies contacted for RFI
- 40 of 44 qualified in RFQ
- 10 teams respond to RFI
- 6 teams invited to RFP
- 3 proposals received
- 1 selected

The Ohio State University & Ohio State Energy Partners

The Deal Structure

Innovative Financing

- Multiple tranches of debt across a ProjectCo / HoldCo structure to optimize ratings, financing costs, and tenors
- Unique structure with 2 vehicles designed to get better overall financing conditions
- Vehicles rated by Fitch:
  - OSEP: A-
  - OSEP HoldCo: BBB
  - Reflects the high degree of revenue stability over the long-term agreement



The Ohio State University & Ohio State Energy Partners

Shifting Operational Risk to Energy Partner

Risk to Energy Partner →

Client Decision Criteria	Design Build Agreement	Performance Contracting Agreement	Thermal Services Agreement	Power Purchase Agreement	Master Energy Agreement	Concession Agreement
Typical Tenor	1 to 3 Years	10 to 15 Years	25 Years (Typical)	25 Years (Typical)	25 Years (Typical)	25-99 Years
Funding Source	Client	Client or ENGIE	ENGIE	ENGIE	ENGIE	ENGIE
Funding Type	KHC	Client/ENGIE/Project Finance	ENGIE/ Project Finance	ENGIE/Project Finance	ENGIE/Project Finance	ENGIE/Project Finance
Technical Scope: Main Focus	ALL	ECMs	Central Plant	Solar/Wind/CHP	All including ECM	All including ECM
Turn-Key (EPC, O&M, Funding)	YES	YES	YES	YES	YES	YES
Life Cycle Risk Transfer	NO	NO	YES	YES	YES	YES
Performance Guarantees	NO	YES	YES	YES	YES	YES
End of Term Buyout Provisions	None	To be Negotiated	To be Negotiated	To be Negotiated	To be Negotiated	To be Negotiated
Option for Value Monetization	NO	NO	YES	YES	YES	YES

The Ohio State University & Ohio State Energy Partners

ENGIE-Axium proposal

Strongest proposal

ENGIE N.A. and Axium Infrastructure U.S. formed a new consortium "Ohio State Energy Partners" to combine their expertise for this project.

- **$1.165 billion closing payment to Ohio State**
  - Largest single addition to the University endowment
  - $150 million earmarked for Academic Collaboration – scholarships, faculty chairs, and philanthropy
- **No jobs lost – adding new jobs**
- **Improve campus energy efficiency**
  - ≥ 25% within 10 years
- **Smart meters deployment throughout campus**
- **$50 million Energy Advancement and Innovation Center**

The Ohio State University & Ohio State Energy Partners

Scope of the Agreement

50 – year Partnership

Alignment of mission, shared risks and rewards, and flexibility to look at the long-play are keys to a successful partnership

- **Operate main campus Utility Systems**
  - Electricity, natural gas, steam & condensate, chilled water, geothermal generation plants and distribution
- **Capital investments**
  - Energy conservation measures – all of campus
  - Existing system improvements and replacements
  - Utility system expansions to serve new campus facilities
- **University facilities planning and design**
- **University continues to buy energy supplies**
- **Academic Collaboration**

The Ohio State University & Ohio State Energy Partners

Scope of the Agreement – Structured Fee

- **Operations & Maintenance Fee**
  - 3 Year average of actual costs, starting with the university's costs
  - CPI adjusted
- **Fixed Fee**
  - Adjusted for inflation
- **Variable Fee**
  - 50/50 Debt/Equity on capital investments
  - ROE = formula
    - Based on 5 states approved ROEs for public utilities
    - First 5 years = 9.35%
  - Debt = "yield to worst" Barclays, Baa US Corp. Investment Index

University pays a monthly fee to Concessionaire =
O&M + Fixed + Variable

Year 1 fee is in-line with the university's prior year costs

The Ohio State University & Ohio State Energy Partners

Scope of the Agreement – Revenue Risks and Rewards

- **Variable Fee Investments**
  - Company earns a return on capital invested
  - ECM investments support the KPI targets
  - University must approve the investments
- **Operations & Maintenance Fee**
  - Costs above the cap are the company's risks
  - Costs below the cap are the company's benefit
- **Performance Standards and KPIs**
  - Penalties for missed standards
  - Reward for exceeding EUI 25 % reduction target and doing so under for $250 million

The Ohio State University & Ohio State Energy Partners

Scope of the Agreement – Performance Targets

- **Performance Standards**
  - The company must meet or exceed current university standards and practices
- **Key Performance Indicators**
  - 13 KPIs across 8 categories
  - Charges for KPI events – escalate with the severity and/or repetitiveness
  - Built-in flexibility
- **University must approve the company's capital investments**
  - Annual cycle with a Five-Year Plan, flexibility built-in
  - Energy Advisory Committee
  - University has estimated the 25% EUI improve cost to be $250 M over 10 years

Scope of the Agreement – Performance Targets

KPI Calculation for Electricity Unplanned Outage Hours

	KPI Compensation to the University							
Annual Score % of Availability	0 Consecutive Event Years	2 Consecutive Event Years	3 Consecutive Event Years	4 Consecutive Event Years	5 Consecutive Event Years	6 Consecutive Event Years	7 Consecutive Event Years	8 Consecutive Event Years
Target 100.00 % - 99.996 %	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
99.995 % - 99.994 %	$ -	$ -	$ 500,000	$ 1,000,000	$ 2,000,000	$ 4,000,000	$ 8,000,000	$ 10,000,000
99.993 % - 99.992 %	$ -	$ 500,000	$ 1,000,000	$ 2,000,000	$ 4,000,000	$ 8,000,000	$ 10,000,000	$ 10,000,000
99.991 % - 99.990 %	$ 500,000	$ 1,000,000	$ 2,000,000	$ 4,000,000	$ 8,000,000	$ 10,000,000	$ 10,000,000	
99.989 % - 99.988 %	$ 1,000,000	$ 2,000,000	$ 4,000,000	$ 8,000,000	$ 10,000,000	$ 10,000,000		
99.987 % - 99.986 %	$ 2,000,000	$ 4,000,000	$ 8,000,000	$ 10,000,000	$ 10,000,000			
99.985 % - 99.984 %	$ 4,000,000	$ 8,000,000	$ 10,000,000	$ 10,000,000				
99.983 % - 99.982 %	$ 8,000,000	$ 10,000,000	$ 10,000,000					
< 99.982 %	$ 10,000,000	$ 10,000,000						

Examples: For illustration purposes only

Annual Score		KPI Event	Consecutive Event Years	Average Consecutive Year Score	KPI Charge
Year A	99.997%	No	0	99.997%	$ -
Year B	99.992%	Yes	0	99.992%	$ -
Year C	99.988%	Yes	2	99.990%	$ 1,000,000
Year D	99.995%	Yes	3	99.992%	$ 1,000,000
Year E	99.995%	Yes	4	99.993%	$ 2,000,000
Year F	99.981%	Yes	5	99.990%	$ 10,000,000
Year G	99.998%	No	0	99.998%	$ -
Year H	99.994%	Yes	0	99.994%	$ -
Year I	99.983%	Yes	2	99.989%	$ 8,000,000
Year J	99.996%	No	0	99.996%	$ -

The Ohio State University & Ohio State Energy Partners

Keys to a successful process – Patience

- **University**
  - Do not assume bidders understand the university processes
  - Do not assume the deal is perfectly designed from the start
  - Encourage bidder questions and provide detailed responses
  - Flex with changes to the market

4 bidders may ask the same question 10 times with different wording each time. Keep talking until both sides understand the real question and its answer.

- **Bidders**
  - Have abundant patience for complex university processes
  - Be willing to consider unique provisions
  - Flex with changes to the market
  - Avoid deal fatigue

Over a multi-year development period an economic (e.g. taxes) outlook can change a bidder's perspective and valuation of a deal.

The Ohio State University & Ohio State Energy Partners

Keys to a successful process – Building the Teams

- **Legal Expertise**
  - P3 infrastructure deals
  - Utility regulation
  - Concession contract drafting
- **Financial Expertise**
  - Develop potential bidders for a very unique deal
  - Valuations - specifically infrastructure deals (e.g. M&A)
  - Help bidders avoid deal fatigue
- **Technical Expertise**
  - Expertise in utility infrastructure
  - Independent engineering assessments

Find the right external advisors to enhance the internal expertise

In addition to specific subject matter experts, the project must have a champion(s) that understands the entire deal

The Ohio State University & Ohio State Energy Partners

Keys to a successful process – Communication

- **Internal stakeholders communications**
  - Clear message of the project objectives
  - Leadership's public commitment to the project purpose
  - Continual communication with stakeholders
  - Audience-specific messages to stakeholder groups
  - Welcome dialogue, even from protestors

1. *Say what you are going to say.*
2. *Say it.*
3. *Say what you said.*
4. *Repeat.*
5. *Repeat.*

- **Bidder communications**
  - Q&A log for all bidders
  - Multiple iterations of the agreement
  - Digital data room – 50,000 + files
  - One-on-one meetings with bidders

Dealing with sensitive & competitive information

The Ohio State University & Ohio State Energy Partners

Keys to a successful process – Data & Due Diligence

- **University**
  - Meet/speak to bidder references, ask how the company handles emergencies and disputes
  - Gather all operations and technical data together
    - Load profiles - Equipment specs – O&M records – System performance records – Capex forecasts
  - One-on-one meetings with bidders
- **Bidder**
  - Gather valuable data through all available mechanisms
    - Some bidders used the open nature of the university to spend time walking through buildings, talking to vendors, contractors, and former employees
  - Insist on the opportunity to speak with the current system operations personnel

The Ohio State University & Ohio State Energy Partners

Keys to a successful process – A True Partnership

Keys to Success

The Partnership

Make it easier to succeed than to fail

- **Balanced risks and rewards**
- **Flexibility**
- **A dispute resolution staircase**
- **Diligent attention and advocacy**
- **Alignment**

The Ohio State University & Ohio State Energy Partners

Keys to a successful Partnership – Balanced Risks

- **Focus on the Partnership**
  - If the partnership becomes adversarial, both sides lose
  - Both sides must have goals that are technically and economically feasible
  - Build an agreement that, where possible, provides mutual incentives/motivations
  - Acting independently, either party would take a similar action
- **Build in intentional flexibility**
  - 2,665 pages of contract is not enough to capture all possibilities
- **Establish clear and concise results requirements**
  - BUT, be less detailed and prescriptive on how such results are achieved
  - Strong unambiguous requirements with included forgiveness and tolerance

The Ohio State University & Ohio State Energy Partners

Keys to a successful Partnership – Dispute Resolution

- **Have a strong contract, but don't rely on it for common sense**
  - "Let's go to the contract" should not be the most frequent response to minor issues
- **Build a long (and perhaps steep) dispute escalation staircase, for example**
  - Level 1 – Operating personnel
  - Level 2 – Senior directors
  - Level 3 – Executive VPs
  - Level 4 – Third party mediation/arbitration
  - Level 5 - Litigation

The Ohio State University & Ohio State Energy Partners

Keys to a successful Partnership – Attention & Advocacy

- **After the agreement is in place, the work has only just begun**
  - Company and university should plan for senior management that will be solely dedicated to the success of the partnership.
  - They will communicate with each other almost daily
    - *(and sometimes multiple times a day, and nights, and holidays, and vacations, and…..)*
  - They need the authority to reach agreeable solutions, which should almost eliminate the need to climb beyond level 2 of the dispute resolution process
  - Each must not only advocate for their respective organization, but for the other's organization as well

The Ohio State University & Ohio State Energy Partners

Keys to a successful Partnership – Alignment

- **The university and the company must have a close alignment of needs, capabilities, and corporate values**

  Throughout the RFQ-RFI-RFP process, the university clearly and repeated stated its values and goals relative to its academic mission, its commitment to operating sustainably, and its desire to create a new model for comprehensive energy management. These were the lenses through which the university evaluated bidders and their proposals.

- **The decision to enter into the 50-year Long Term Lease and Concession Agreement was made only after the university was confident that the deal would be a mutually beneficial partnership capable of advancing our stated values and goals**

The Ohio State University & Ohio State Energy Partners

Ohio State Energy Partners

- **Stable, long-term investment in assets**
  - Positive history and forecast
  - Steady and predictable returns and cash flows
- **Distributed utility system operations**
  - Aligns with core strengths
  - District systems, single owner/customer
- **Opportunity to be an industry leader**
  - Academic collaboration and Innovation
  - Showcase a new energy management model

The Ohio State University

- **Stable, long-term investor operator**
  - Achieve efficiency and sustainability goals
  - Steady and predictable cash flows
- **Distributed utility system operations**
  - Not the university's core strengths
  - Campus systems, single vendor
- **Opportunity to be a university leader**
  - Redirect capital to academic mission
  - Showcase a new energy management model

The Ohio State University & Ohio State Energy Partners

Conclusion

- **Presents a win/win arrangement for campuses and vendors**
  - Allows for the redirection of university resources
  - Provides the concessionaire with stable cash flow and long-term investment growth
  - Allows both parties to do what they do best
  - A balance of risk for both parties

- **There are many possible variations of the model**
  - Asset transfer vs. asset lease
  - Including commodity supply
  - Upfront payment alternatives
  - Shared investments options