



THE OHIO STATE UNIVERSITY

Comprehensive Energy Management FY18 annual report

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Senate Fiscal Committee | Feb. 26, 2019



Background

- Ohio State entered 50-year partnership in 2017 after a years-long review
 - Review included RFQ, RFI and RFP phases
 - COPE, PPCS and Faculty Advisors committee provided input
 - University Senate voted to support project on April 4, 2017
- University's partner is Ohio State Energy Partners (ENGIE-Axium)
- University report will be delivered each year to governance system
 - Senate Fiscal, COPE, PPCS and University Research Committee



Summary: A transformational partnership



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



Support for the academic mission

Funding support new endowments, capital funds and other priorities



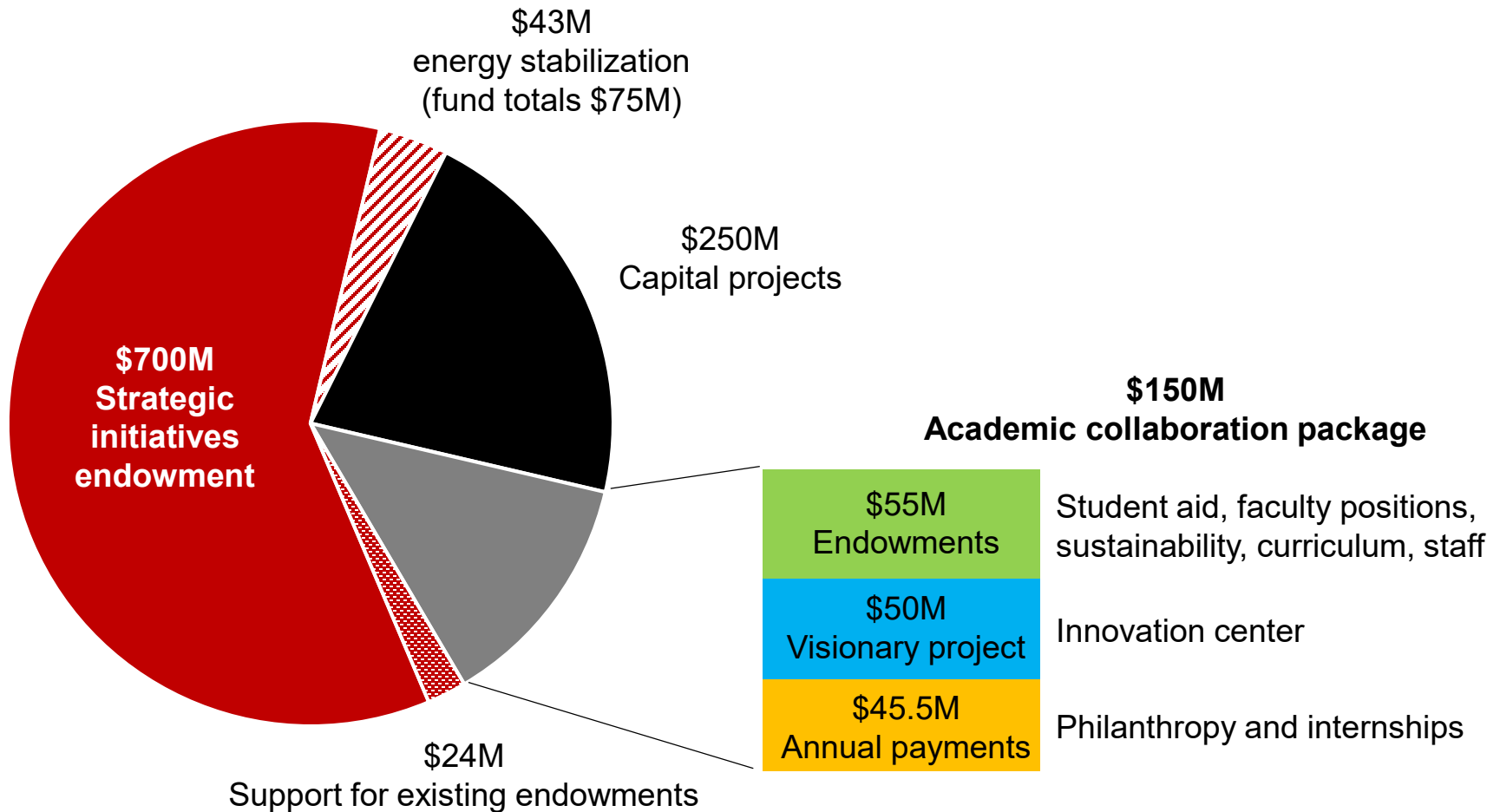
Funding source for

- Buckeye Opportunity Program
(covers tuition for Ohio Pell students)
- Teaching Support Program
(professional development for faculty)



Support for the academic mission

Funding support new endowments, capital funds and other priorities





Detail: New endowments

Endowment	Fund at inception	6/30/18 Market Value	FY18 Distribution
Strategic Initiatives	\$ 700,000,000	\$ 715,480,605	\$ 22,164,325
Energy Stabilization*	\$ 75,000,000	\$ 76,513,064	\$ 2,230,988
Academic Collaboration funds			
ENGIE-Axium Sustainability Projects Endowment Fund	\$ 15,000,000	\$ 15,359,442	\$ 512,352
ENGIE-Axium Undergraduate Endowed Scholarship Fund	\$ 12,500,000	\$ 12,799,535	\$ 426,960
ENGIE-Axium Graduate and Professional Endowed Scholarship Fund	\$ 12,500,000	\$ 12,799,535	\$ 426,960
ENGIE-Axium Sustainability Curriculum and Staff Development Endowment Fund	\$ 5,000,000	\$ 5,119,814	\$ 170,784
ENGIE-Axium Endowed Dean’s Chair Fund	\$ 3,500,000	\$ 3,583,870	\$ 119,549
ENGIE-Axium Endowed Chair Fund (1)	\$ 2,000,000	\$ 2,047,926	\$ 68,314
ENGIE-Axium Endowed Chair Fund (2)	\$ 2,000,000	\$ 2,047,926	\$ 68,314
ENGIE-Axium Endowed Professorship Fund (1)	\$ 1,000,000	\$ 1,023,963	\$ 34,157
ENGIE-Axium Endowed Professorship Fund (2)	\$ 1,000,000	\$ 1,023,963	\$ 34,157

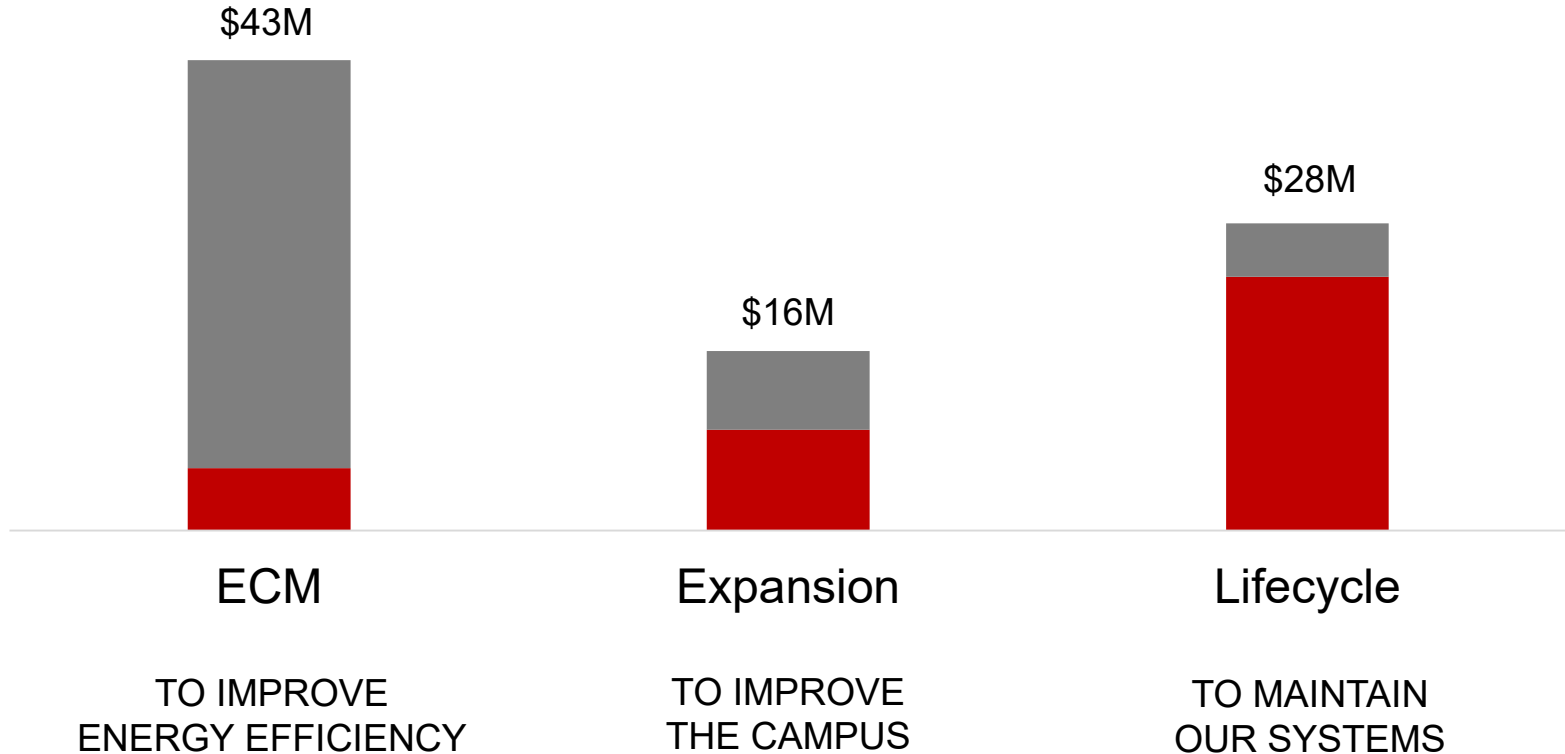


Energy efficiency and other improvements

The university has approved nearly \$88M in capital projects

Approved capital projects

■ FY18 start ■ FY19 start





Detail: FY18 capital projects

Project #	Project Title	Budget ² (\$000)
05-18-LFC	McCracken Power Plant - Boiler Controls and Equipment Replace.	\$ 6,252
07-18-LFC	McCracken Power Plant - North Stack Repairs and Brickwork	\$924
10-18-LFC	Tunnel and Utility Systems Repairs and Upgrades	\$ 14,600
11-18-LFC	Electrical Distribution System Upgrades	\$ 945
26-18-LFC	Campus Natural Gas Distribution System Upgrade	\$ 544
	Lifecycle Subtotal Budget	\$ 23,265
06-18-EXP	Cannon Drive - Phase I - Utility Infrastructure	\$ 3,940
09-18-EXP	South Neil Steam Capacity Upgrade (Design Only) ³	\$ 87
12-18-EXP	Postle Hall Utility Infrastructure Enabling Project	\$ 3,287
14-18-EXP	Morehouse Chiller Electrical Distribution infrastructure	\$ 133
15-18-EXP	College Road Infrastructure (Design Only)	\$ 1,788
	Campus expansion & renovation subtotal Budget	\$ 9,235
02-18-ECM	Campus Lighting - Buildings - Phase I	\$ 3,412
03-18-ECM	Dreese Laboratory 3.0 – Whole building energy optimization	\$ 2,312
	ECMs subtotal Budget	\$ 5,724
	Total Budget Approved in Fiscal Year 2018	\$ 38,224

² Many of the approved projects are being executed over multiple years.

³ This project was approved only for the design phase.



Detail: FY19 capital projects

Project #	Project Title	Budget ⁴ (\$000)
22-19-LFC	McCracken Roof Phase II	\$ 2,115
25-19-LFC	Air System Modernization (Design Only)	\$ 27
48-19-LFC	Safety Upgrades	\$ 375
62-19-LFC	City Water Loss Risk Assessment	\$ 48
51-19-LFC	Cyber security implementation	\$ 1,570
	Lifecycle Subtotal Budget	\$ 4,135
13-19-EXP	Advanced Material Corridor 13-18-EXP	\$ 795
28-19-EXP	Cannon Drive Phase 2 – Utility Systems 28-19-EXP	\$ 1,637
57-19-EXP	South Residence Halls air conditioning (Design Only)	\$ 56
16-19-EXP	Combined Heat and Power Plant and Midwest District Heating & Cooling Loop (Pre-Design & Permitting)	\$ 735
19-19-EXP	New Hospital Phase 1	\$ 1,079
20-19-EXP	Health Sciences Center Utility Systems (Design Only)	\$ 528
27-19-EXP	Ambulatory Expansion (Design Only)	\$ 22
30-19-EXP	West 12th Ave infrastructure & BRT (Design Only)	\$ 480
44-19-EXP	ENGIE Digital platform	\$ 649
67-19-EXP	Kunz-Brundige Franklin County Extension Building	\$ 230
68-19-EXP	Newton Hall Expansion 68-19-EXP	\$ 119
71-19-EXP	Harding Hospital connection to chiller plant	\$ 2,333
	Expansion Subtotal Budget	\$ 8,663
18-19-ECM	Building Energy Systems Optimization Phase I	\$ 30,150
01-19-ECM	Campus lighting – Exterior	\$ 1,368
45-19-ECM	Behavioral ECM through innovation	\$ 150
53-19-ECM	Campus Lighting - Buildings Phase II	\$ 5,696
	ECMs subtotal Budget	\$ 37,364
	Total Budget Approved in Fiscal Year 2019	\$ 50,162

⁴ Many of the approved projects are being executed over multiple years.



Progress toward sustainability goal

- Ohio State's energy efficiency goal = 25% improvement within 10 years
 - Energy Use Intensity ("EUI") = energy used per sf of building area
- **Progress to date:** 2.8% improvement in FY18 EUI vs. FY17
 - North residence halls contributed to improvement in FY18
 - Energy conservation measures will contribute in future years

Fiscal Year	Total Area (sf)	Variance (Yr /Yr)	EUI Score (kBtu/sf)	Variance (Yr /Yr)
2017	24,174,908	Baseline	200	Baseline
2018	24,862,569	2.84%	194.4	- 2.8 %



Energy Advancement and Innovation Center

- OSEP proposed \$50 million innovation center in winning bid
- Plans under development through Visionary Project Advisory Committee
- **Current status:** Board of Trustees approves \$3 million for design work
 - Sited with Interdisciplinary Research Facility in innovation district

Trustees approve \$3M for design of the Energy Advancement and Innovation Building

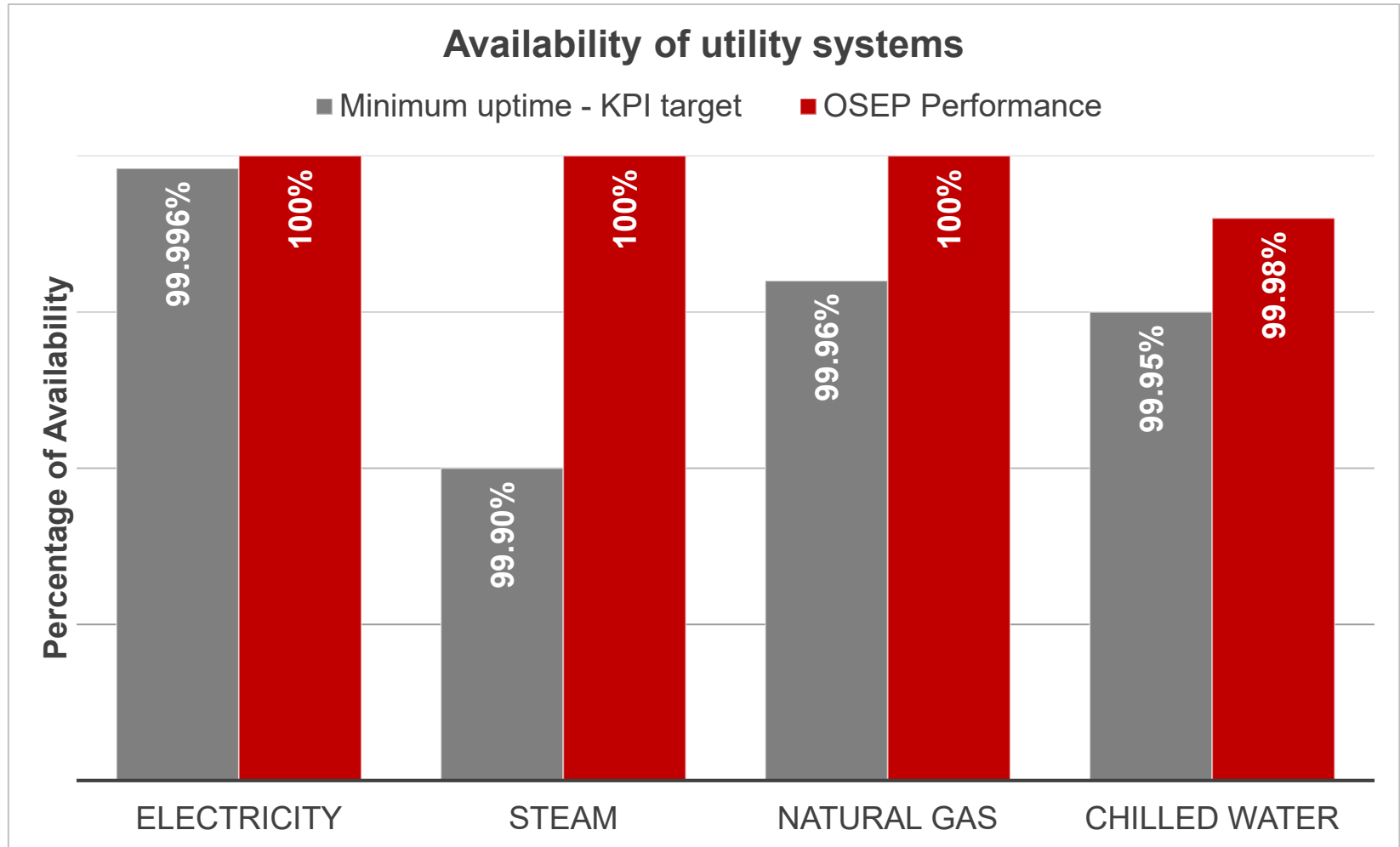
The Ohio State University Board of Trustees approved on Friday \$3 million for design of a building that will help anchor an envisioned innovation district in the university's west campus.

The Energy Advancement and Innovation Center will be a hub where Ohio State faculty members, students, alumni, ENGIE researchers, local entrepreneurs and industry experts work together on the next generation of smart energy systems, renewable energy and green mobility solutions.



Operations

OSEP has maintained the university's high service levels





Financial report

- Fee structure covers operations in line with university's historical trends
- OSEP provides funding for capital projects, which are factored into annual fee
- Financial incentives reward performance and sustainability improvement

FEES TO DATE

Projects	FY 2018 Approved	FY19 Projected
Fixed Fee	\$ 44,260,274	\$ 45,675,000
Capped O&M Fee	\$ 9,048,768	\$ 9,335,306
Uncapped O&M Fee	\$ 0	\$ 112,600
Variable Fee	\$ 0	\$ 1,108,727
TOTAL	\$ 51,872,774	\$ 56,231,633

The university's total energy costs in fiscal 2017 were about \$112 million, including approximately \$56 million in supply costs not captured in the above chart. Energy supply costs in fiscal 2018 were approximately \$54 million.



Sustainability. Innovation.
Academic impact.

Comprehensive Energy Management



CEMP website: go.osu.edu/cemp