

University of Maryland NextGen Energy Pro- gram



Americas

Utilities/Other

The NextGen Energy Program (NextGen) replaces, renews and modernizes the University of Maryland, College Park's aging energy system.

Renewing the energy system will drive student, faculty and staff productivity, and allow the University of Maryland (UMD) to continue to invest in world-class research, attract the best talent and boost the economic well-being of the region and the state.

NextGen will improve the UMD energy system by:

- Updating the combined heat and power (CHP), also known as cogeneration, creating an immediate 23% reduction in emissions.
- Repairing the steam distribution and condensate return systems, to lower commodity costs and emissions and reduce water consumption by 50% a year.
- Modernizing the energy system to incorporate new, high-efficiency technologies of today while providing flexibility to incorporate zero-emission fuels and technologies of the future.

Under the NextGen P3, UMD has contracted with Maryland Energy Impact Partners (MEIP) to design, engineer, finance and install energy system improvements. MEIP will also manage, operate and maintain the university's energy systems.

Project facts		
Location University of Maryland, College Park, MD	Client University of Maryland	Value (NPV) US \$410 million
Consortium Maryland Energy Impact Partners (MEIP)	Plenary Americas' role Developer Equity investor	Developer & Equity Partner Kiewit Development Com- pany
Lead Contractor Kiewit Power Constructors Co.	Operations Honeywell	Financial close date June 2024
Contract terms 33 years, DBFOM	Project website https://nextgen.umd.edu/	

Sustainability features

NextGen plays a critical role in ensuring that UMD can depend on a sustainable energy system for decades to come. NextGen not only puts the university on a pathway to achieve its goal of a fossil fuel-free energy system by 2035, but it also increases efficiency and sustainability, reducing carbon emissions from the Central Energy Plant by 23% and saving 50% of the total water usage the plant requires annually.



Design features

The Project includes the following features:

- Installation of new renewable fuel-capable equipment in the Central Energy Plant (CHP).
- Full electrification of the District Thermal Plant serving research-intensive portion of campus
- Installation of high-efficiency electric chillers
- Completion of a building-by-building survey to identify projects that realize the greatest carbon reductions, including development of hot water districts and innovative technologies.

Innovations

The modernization and flexibility of the improved energy system will allow UMD to incorporate emerging technologies. NextGen will provide:

- Improved operational efficiency, water recycling and decreased energy loss.
- Flexibility to incorporate low and zero-emission fuel options in the future.
- Energy conservation through enhanced building controls and monitoring systems.
- Energy resiliency enabling UMD to support the campus and surrounding community during power outages.

This project was financed using taxable municipal bonds that were designated as Green Bonds by Kestrel 360, Inc. dba Kestrel for their net zero alignment and conformation with the ICMA Green Bond Principles.

Local economic impacts

The Project team has committed to the following Minority and Women-Owned Business Enterprise targets:

- 15% of the total cost of the initial capital program
- Implementation of a robust program of partnering and mentoring small businesses to develop MBE firms for additional NextGen work.
- 30% of Concessionaire's annual fixed operations and management fee throughout the NextGen Program's term.

- 50% of the total cost of any future design and construction work required for Thermal Distribution System capital improvements
- 30% of the total cost of any future additional capital improvements (other than Thermal Distribution System capital improvements).

Community benefits

MEIP will provide academic collaborations that include opportunities for undergraduates, graduates, and faculty members and researchers, including:

- Student scholarships and internships,
- Groundbreaking research in collaboration with faculty and students, and
- New and innovative academic programs.