The NextGen Energy Program

Presentation to College Park City Council
December 10, 2024

UNIVERSITY OF MARYLAND FEARLESSLY FORWARD

The NextGen Energy Program is a plan to replace, renew and modernize the University of Maryland, College Park's aging energy system.

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President Pines’ Commitment

"A carbon-neutral campus is a significant step, but now it’s time to set our sights on reducing UMD's dependency on fossil fuels. We are committed to a fossil fuel-free power plant under the NextGen Energy Program."

- President Pines, Spring 2024

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State of Maryland decarbonization targets…

- 60% reduction in Greenhouse Gas Emissions by 2031 (2006 Baseline)
- Net-Zero emissions by 2045

NextGen aligns…

- Achieves **carbon neutrality on Day 1** through the use of carbon offsets
- **Reduces the CEP GHG emissions by 23%** starting in 2027
- Increases UMD's purchases of energy from renewable resources (including potentially renewable natural gas)
- Pathway to achieve **net-zero GHG emissions by 2035** through increased efficiency and lower consumption
- Critical component of **CAP 3.0**

NextGen Construction Timeline and Next Steps

- **Summer 2024:** Demolition of south wing, Service Building provides space for Interim Boiler Plant and construction of new energy plant
- **Fall 2024:** Construction of Interim Boiler Plant
- **January 2025:** Interim Boiler Plant in place to serve steam needs of campus while new energy plant is under construction
- **2025 – 2026:** Construction of new energy plant (alternative fuel-capable equipment)
- **2026:** Renewal of steam distribution system from energy plant (across Baltimore Avenue) to campus steam lines
- **2027:** Renewal of a primary chiller plant on campus

Interim Boiler Plant

View from Diamondback Drive looking west toward Baltimore Avenue

View from west alley looking southeast toward Rossborough Lane

Economic & Community Benefits

- President Biden’s Inflation Reduction Act (IRA) is estimated to provide incentives of $69 - $79M associated with cogeneration
- Construction is estimated to create 120 annual full-time trade employment opportunities at prevailing wages
- 15% of the total cost of the initial capital program classified as MBE or WBE
- Supports neighboring community (20,000 homes) during limited natural gas supply and/or periods of high demand

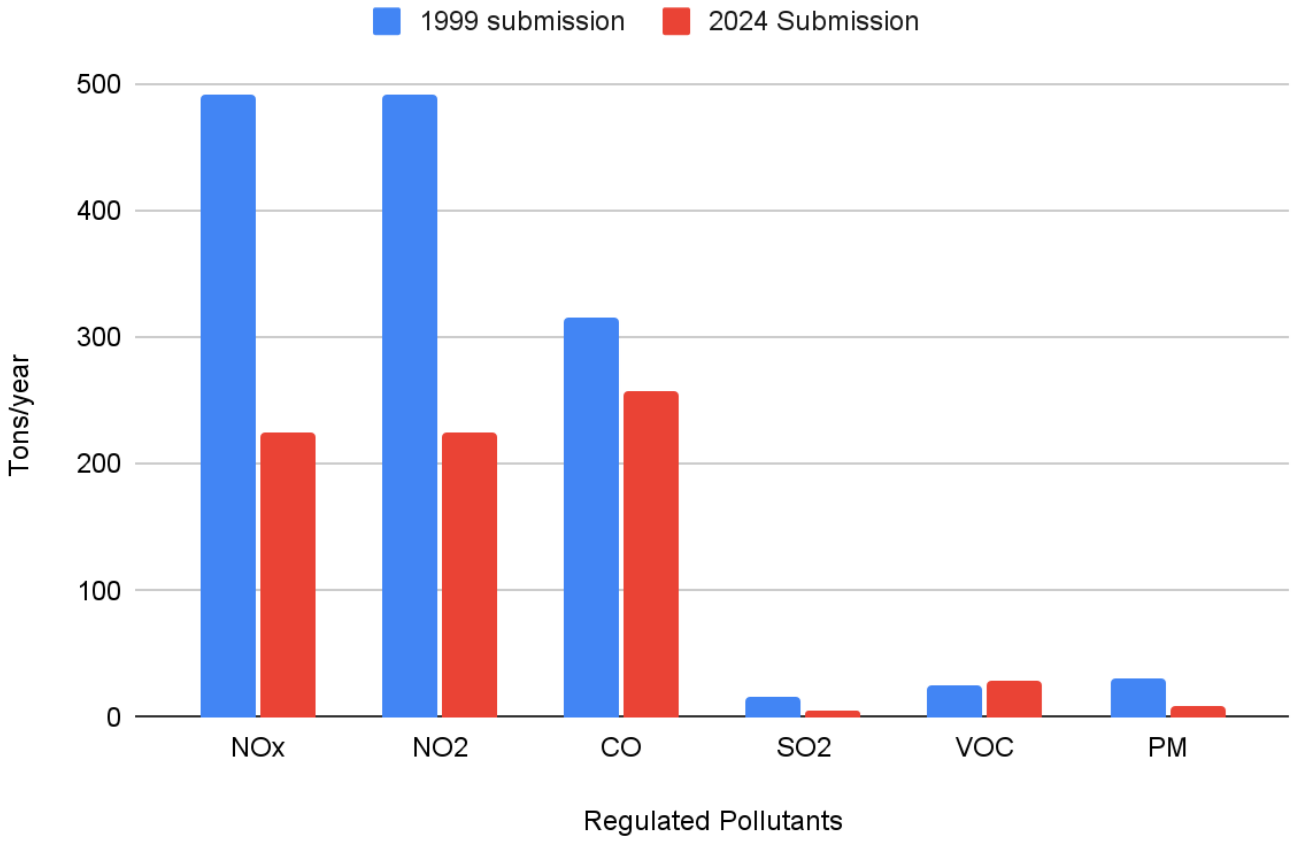
Decarbonization Study

- Analysis of campus transition to renewable natural gas
- 3-year heating, cooling and electrical load profile for every building
- Assessing building systems and identify measures to lower emissions
- Identify upgrades and costs for conversion to energy efficient and modern heating and cooling technologies
- Reduce consumption, prepare UMD for pending state energy regulations and reduce emissions

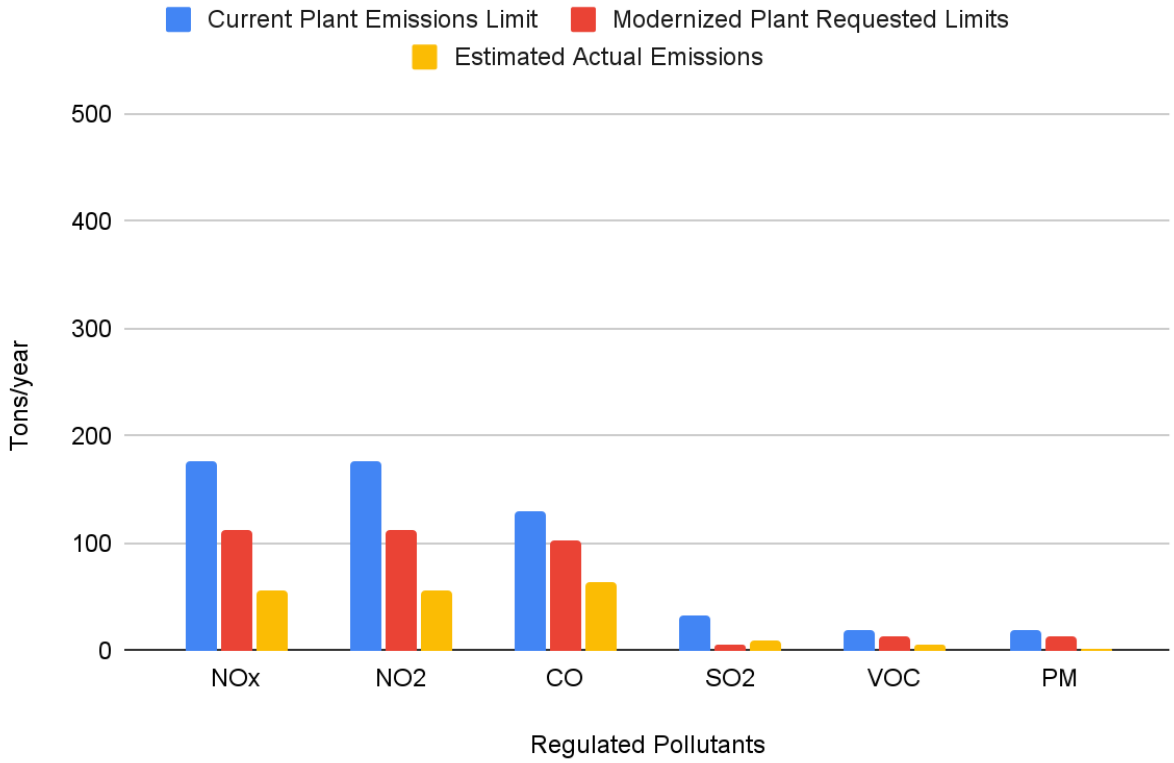
Next Steps: Air Permit Public Process

- Submit Air Permit application to the Maryland Department of the Environment for the new Central Energy Plant (CEP).
- Permit process will ensure that the new equipment in the CEP falls within required air pollutant limits based on equipment type and applicable state and federal standards for NOx, VOCs, CO, particulate matter, and SO_2

Regulated emissions: Potential to Emit (PTE)



Emissions Limits & Anticipated Emissions



NextGen benefits

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For more information, visit NextGen.umd.edu