



# St. John's University Plans for Aggressive Emissions Reduction by 2030



**ST. JOHN'S  
UNIVERSITY**

Enrollment:  
Approx. 15,720

Institution Type:  
Private University

Region:  
Downstate



## A Roadmap to Sustainability

With a longstanding commitment to reduce its carbon footprint while creating a sustainable and healthy campus environment, St. John's University developed an energy master plan in 2017 to achieve an aggressive goal of 50% reduction in greenhouse gas emissions by 2030. As a New York State Energy Research and Development Authority (NYSERDA) Clean Green Campuses member, the university received funding to develop this plan through NYSERDA's REV Campus Challenge Technical Assistance for Roadmaps program, which has since transitioned to the FlexTech program.

## Executing the Energy Master Plan

Everything started with NYSERDA's funding, which came at the perfect time. The university's associate vice president asked for an energy master plan, and the significant funding available enabled St. John's to pursue development of an energy master plan. The purpose of the energy master plan was to find out what is achievable and assist with project prioritization.

By signing the NYC Carbon Challenge pledge, the university committed to a 40% reduction in greenhouse gas emissions by 2030. There wasn't a strategy to achieve this prior to the energy master plan, which demonstrated that St. John's University could not only meet their NYC Carbon Challenge pledge, but could exceed it - achieving a 50% reduction in campus emissions by 2030.

## Achieving Results

The immediate benefit was a Level II Energy Audit implemented as a part of the energy master plan and coincides with Local Law 87 requirements—[this New York City law](#) requires buildings have energy audits and retro-commissioning conducted every 10 years. The audit was immediately useful in meeting half of the LL87 requirements. The most revealing infrastructure priority is the conversion from steam to hot water, which is currently underway.



One cell fan wall cooling tower

The long-term benefit of participation in the program and creating the energy master plan is the prioritization of greenhouse gas reduction projects—there are five- and 10-year project implementation plans to reduce emissions by 50% by 2030. One example of an efficiency project that resulted from the plan is the installation of electronically commutated motors (ECMs, or EC motors) on cooling towers and air-handling units on campus. In addition, four air-handling units were installed in the law school, including fan wall systems with motors between 15 and 20 horsepower. Another five units with fan wall systems have been approved. On one cooling tower alone, fan power consumption was reduced 60% by retrofitting six 60-horsepower fans with 36 7.5-horsepower ECM axial fans.

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## Overcoming Challenges

Finances are always going to be a hurdle due to the university’s limited resources and aging infrastructure as well as repair and upgrade costs. The focus is on what will accomplish the largest greenhouse gas reduction and how well the infrastructure will adapt to it. The electrical infrastructure on campus in terms of distribution and end use must also be considered.

## Looking to the Future

The energy master plan led to additional studies for the university; ground source heat pumps and solar are two frontiers being explored. A ground source heat pump district loop would provide the residence halls with 600 tons of cooling and 8 million Btus of heating. The University is exploring options for ground source heat pumps through [NYSERDA’s FlexTech program](#). There is also a proposal for 4 MW of solar canopy parking lot, and requesting proposals for additional rooftop solar panels, both initiated because of the energy master plan and NYSERDA’s offer to incentivize covered parking lots and rooftops through NY-Sun’s [Megawatt Block incentive program](#) for non-residential and large commercial and industrial solar projects.

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