



NEW YORK  
STATE OF  
OPPORTUNITY

NYSERDA

# Machine Learning for Smart Energy Savings

## Case Study

Company Name:  
ATCO

Square Footage:  
210,000 Sq. Ft.

Energy Savings Results:  
252,580 kWh  
3,412.14 BTUs  
\$42,938 in annual cost savings

Sector:  
Commercial

Location:  
555 Fifth Avenue  
New York, NY

Services:  
Historical energy benchmarking, predictive analytics, centralization of BMS data points, integrated software application

## Background

ATCO is a real estate operating company with a diverse portfolio of more than 20 buildings, primarily located in and around New York City. Family owned and operated since 1922, ATCO prides itself on sustainable practices and is constantly searching for new ways to reduce and optimize energy consumption. ATCO had no prior experience with real-time energy management (RTEM) solutions and was curious to know how RTEM could be applied to its portfolio. To test this, ATCO partnered with a New York-based RTEM solution provider, Prescriptive Data, to develop a solution tailored to ATCO's building operations needs. ATCO decided to pilot Prescriptive Data's RTEM solution at an initial portfolio property: 555 Fifth Avenue — a 20-story, 210,000 square foot commercial office building in Midtown Manhattan.

## The Smart Next Step in Efficiency

Built in 1955, the building at 555 Fifth Avenue is both LEED and ENERGY STAR certified. With several energy efficiency measures already in place, the ATCO executive team saw real time energy management as the next step to achieving new energy savings. With a focus on delivering solutions to enhance building operations, Prescriptive Data was a logical partner to support ATCO in taking their first step in real time energy management.

Prescriptive Data is a qualified RTEM Program vendor that focuses on maximizing the potential of building operators through smart building management solutions. Nantum, Prescriptive Data's flagship product, is a cloud-based, SaaS, and secure building operating system that integrates disparate building data silos, including BMS and non-BMS resources, to optimize energy consumption, reduce energy costs, increase tenant comfort, and provide building owners, operators, and facility managers with enhanced visualization of their buildings and portfolio.

The executive team at ATCO was excited about the potential that Prescriptive Data and its Nantum solution offered to help identify new opportunities for energy savings. Working closely with the building staff at 555 Fifth Ave, the Prescriptive Data team provided active customer support and trainings to demonstrate how the RTEM solution could not only drive energy savings, but also facilitate and improve the building operator's work.





*“The biggest benefit [we’ve] realized is the savings on the electric demand. Having the [Nantum] app and seeing how much [we’ve] saved over the past 90 days, yesterday or today is really helpful. The system is doing a great job adding intelligence [to building operations].”*

— Russell Carroll,  
Chief Engineer ATCO  
Properties & Management

## System Integration for Machine Learning

Prescriptive Data integrated the Nantum software platform with 555 Fifth Avenue’s existing BMS to centralize the data from the chilled water system, condenser water system, heating hot water system, air distribution systems, and utility meters. Prescriptive Data also installed and integrated occupancy sensors to inform Nantum’s machine-learning algorithms and produce efficiency recommendations based on tenant behavior and actual building usage. At 555 Fifth Avenue, this included using same-day usage and interior and exterior temperature data to optimize when to ramp up the HVAC system, and using building occupancy data to provide the optimum time to ramp it down, helping reduce energy consumption while maintaining tenant comfort. In addition to energy savings opportunities, the added feature of occupancy monitoring provided building operators with new insights and a more comprehensive understanding of how building performance could be optimized for actual tenant usage. Furthermore, the alarm and notification features of Nantum provided the building operator with a heightened situational awareness and allowed the operator to identify and address any issues quickly and efficiently.

Prescriptive Data also worked with the building operator to benchmark the building’s energy usage based on its best performance on similar days, providing building operators with a point of comparison for daily building performance. By establishing historical benchmarks and leveraging Nantum’s centralized analytics platform, the 555 Fifth Ave staff has been able to proactively operate the building’s energy consumption to improve upon the benchmark, resulting in ongoing and continuous improvement of the building’s energy efficiency over time.

Combined, the benefits to building operations delivered by the Nantum platform have resulted in an estimated **252,580 kWh** in annual energy savings and **\$42,938** in annual cost savings.

## Benefits Beyond Energy Savings

Through the implementation of the Nantum real time energy management solution, Prescriptive Data helped ATCO successfully achieve new energy savings in an already energy-efficient building. Yet these savings are just one of many benefits resulting from this smarter and more holistic approach to building optimization. Nantum has armed the 555 Fifth team with new tools for building optimization that create both operational efficiencies and insights to improve the overall tenant experience. Though the building operator was initially skeptical, the Nantum platform has become a central component of building operations at 555 Fifth Avenue. As a result, ATCO has decided to implement Nantum across the remainder of its portfolio of buildings. Prescriptive Data continues to work with ATCO to identify new energy savings opportunities and add new features to continuously improve the building’s performance.

## The NYSERDA Real Time Energy Management Program

Through the Real Time Energy Management Program, NYSERDA offers up to a 30% cost-share incentive to support RTEM projects that serve customers in multifamily, commercial, and industrial sectors. The program helps evaluate and qualify vendors, ensuring high-quality RTEM projects that create a smarter building or facility with lower operating and utility costs, and greater appeal, comfort, and marketability.



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