



Continuous commissioning can optimize efficiency

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Traditionally, energy efficiency improvements in existing buildings involve capital investments made to improve the efficiency of building systems. However, there are significant potential energy improvement opportunities in building operations as well. Continuously commissioning a building using advanced monitoring systems that allow building operators to optimize their systems can yield significant results. The New York State Energy Research and Development Authority (NYSERDA) provides \$0.05 per kilowatt hour (kWh) of measured and verified savings to participants who monitor and optimize building performance through the Existing Facilities Program. The incentives help cover the costs of installing or upgrading data collection technology as well as energy management services needed to achieve energy savings based on measurably improved operations.

A successful continuous commissioning system can significantly increase building performance and help owners save energy. It can provide facility operators or managers with a better sense of operating ability and help them plan for capital improvements when systems are getting too old or are not functioning properly.

Continuous or monitoring-based commissioning (MBCx) represents a significant investment of time and money. NYSERDA provides technical and financial support on a number of levels. NYSERDA can cost-share continuous commissioning energy studies. NYSERDA also hires technical consultants to verify energy savings of projects supported by the Existing Facilities Program.

The applicability of this technology across today's building portfolio can be seen by the diversity of building sectors participating in NYSERDA's monitoring-based commissioning offering. They include multinational banks, hospitals, supermarkets, universities and hotels. Owners have seen value in using this technology regardless of their building's energy performance, as some participating buildings had already achieved LEED or Energy Star ratings before installing advanced monitoring systems.

A recent case study released by the Natural Resources Defense Council (NRDC) documents an example of the energy savings opportunities from continuous commissioning in three multi-tenant, high-rise commercial office buildings: <http://www.nrdc.org/business/casestudies/tower-companies.asp>. As a result of the continuous commissioning system, Tower Cos., the owner, achieved savings of 13.2% across the three buildings. In the first year alone, savings from reduced electricity use exceeded total project expenses by more than \$74,000.

While each building is different, continuous commissioning systems are generally designed to easily overlap on top of the existing Building Management Systems (BMS) or metering equipment in the building. They use the data from this equipment in order to provide real-time measurement and verification, energy analytics, and fault detection and diagnostics. More advanced systems have the ability to track BMS, weather, occupancy and energy price data to predict the optimal set points for a

building.

NYSERDA hopes to continue to attract many types of buildings and continuous commissioning technologies to its program. The ultimate goal is to engage participants in a long-term solution that provides sustained annual savings and ongoing improvements. NYSERDA stays involved for up to two years after installation of the continuous commissioning system to help participants maximize their energy savings, learn more about complementary programs that can extend the energy-efficiency benefits into other areas and provide ongoing financial and environmental benefits.

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