

## Continuous commissioning can optimize efficiency



**Ariella Cohen**

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.

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.

**Ariella Cohen is an assistant project manager, energy efficiency services at NYSERDA, Albany, N.Y.**

## Energize NY plus NYSERDA MPP: 1 plus 1 now equals 3



**George Crawford**

There is now a killer combination of Energize NY PACE financing and NYSERDA funding opportunities for multifamily properties that are contemplating larger projects that target energy savings. This "combo" program will work for capital intensive projects with longer paybacks, such as boiler replacements, new windows, HVAC, insulation and pump upgrades. Lighting retrofits can also be included, which will help shorten payback calculations.

The combination of NYSERDA Multifamily Performance Program (MPP) incentives and Energize NY financing will allow multifamily properties to proceed with projects that were not previously economically feasible. Combining NYSERDA MPP funding benefits (which can range from \$500 to \$1,000 per apartment unit) with Energize NY low interest financing can transform cash flow negative projects into cash flow winners from day one. The reason for this "transformation" is that Energize NY offers fifteen year loan amortization schedules along with 100% project financing. Most commercial lenders only offer six year or less payback schedules with less than 100% financing. Even with similar interest rates, extended amortization schedules can make the difference between a cash flow winner versus a cash flow loser. Cash flow negative projects rarely make it off the ground.

Another significant difference between Energize NY and commercial lender financing is that Energize NY financing is repaid via the property tax bill. Tax bills will include a line item for the amount of the Property Assessed Clean Energy (PACE) financing that is due. Payments are made coincident with property taxes. Upon sale or transfer of the property, the remaining loan balance stays with the property and transfers to the new owner along with the other property tax obligations. The loan qualification process is different as well. The qualification is based on the market value of the property and its energy savings potential, not on the creditworthiness of property ownership. Loan amounts are capped at 10% of the appraised market value.

One plus one equals three? Together these programs are greater than each on its own.

Energize NY is a new (2013) PACE program operated by the non-profit Energy Improvement Corp., a local development corporation, which is municipally owned by participating New York State communities. Energize NY financing is currently available in Westchester and Orange Counties and is currently expanding to other NYS communities. It does not operate in N.Y.C.

**George Crawford is a principal at NYG Green Partners, New York, N.Y.**