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What to Expect from NYC's New Energy Benchmarking and Auditing Laws

New York is a city of buildings. According to data provided by the city, the electricity, heating, and hot water we consume in buildings accounts for 75 percent of New York City's greenhouse gas footprint, and \$15 billion per year in energy costs. The city's largest buildings—over 50,000 square feet—comprise nearly half of our total space.

To address the critical area of energy use in existing buildings, the city has enacted a set of efficiency requirements for existing private sector buildings. In December 2009, Mayor Bloomberg signed the four legislative components of the "Greener, Greater Buildings Plan," the most comprehensive set of efficiency laws in the nation.

Together, these laws removed a loophole in the energy code to ensure that it applies to all construction projects, requires annual energy-efficiency benchmarking that will be disclosed to the public, and mandates a set of cost-effective energy-efficiency upgrades and evaluations of the city's largest buildings, both public and private. According to city estimates, the Greener, Greater Buildings Plan will result in an emissions reduction of almost 5 percent. The city also states that the plan will also reduce citywide energy costs by \$700 million annually by 2030 and create roughly 17,800 construction-related jobs over 10 years.

Although the numbers show the long-term environmental and cost benefits of the plan, owners and managers of large residential buildings in New York City will start to feel the impact of two laws, Local Law 84 and Local Law 87, signed as part of the Greener, Greater Buildings Plan, almost immediately between 2011 and 2013. To learn more about the laws' requirements and compliance, we spoke with Phil Vos of Bright Power, a Manhattan-based energy-efficiency company.

Overview of Requirements

The two local laws that concern large apartment building owners are Local Law 84 of 2009 (LL 84) and Local Law 87 of 2009 (LL 87). LL 84 mandates annual energy benchmarking, starting this year. And LL 87 requires owners to perform energy audits and retro-commissioning every 10

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this year. And LL 87 requires owners to perform energy audits and retro-commissioning every 10 years, starting in 2013. Properties subject to the requirements of these laws include:

Buildings over 50,000 square feet in area;

Two or more buildings that have the same owner, together exceed 100,000 square feet, and are on the same tax lot; and

Two or more buildings under the same condo board that together exceed 100,000 square feet, regardless of their relative location.

ALL: What's your sense of how aware building owners are of these energy laws?

PV: Based on conversations I've had and the outreach we've done, I believe more owners have heard of LL 87 than LL 84. It may be because more people are familiar with the idea of an energy audit, even though they may not understand exactly what an energy audit entails.

With LL 84, which is the benchmarking requirement being implemented this year, I've been surprised by the number of people who have quite recently been unaware of it. I find that benchmarking is a term that many people have not heard before.

Energy Benchmarking

ALL: Could you tell me more about benchmarking? What's an energy benchmark?

PV: The way a benchmark works is that you collect a building's energy usage data—such as its utility bills, oil bills, and water usage information—for a given period, usually one year. Then, the information is entered into a software tool, which generates a report analyzing the building's energy use, and comparing it to that of similar properties in the tool's database. In essence, an energy benchmark provides a snapshot of a building's energy performance for a given period of time.

ALL: What are LL 84's benchmarking requirements specifically? How do we know which tool to use?

PV: Under LL 84, all covered buildings are required to submit an annual benchmarking report to the Department of Finance. The requirement starts this year and the report is due by May 1 each year. To be clear, the report is for the calendar year ending 2010 and it is due May 1, 2011.

The tool that the city has specified using is Energy Star's Portfolio Manager, an online benchmarking tool developed by the U.S. Environmental Protection Agency. Portfolio Manager calculates how much energy the building is using overall and, based on that measurement, ranks the building on a scale of 1 to 100, relative to other buildings in its database. The 1-100 ranking is available only for commercial buildings at this time; residential buildings will receive a value for overall energy use in kBtu per square foot.

ALL: In order to use Portfolio Manager, how does an owner obtain the energy data?

PV: Residential buildings will have to benchmark common areas, commercial spaces, and the apartments themselves. Owners or managers will already have access to the usage information for the building's common areas. For commercial areas, Local Law 84 states they are required to ask for usage information from commercial tenants in January, and those tenants must provide it no later than Feb. 15. For apartments, where owners or managers don't already have access to

eters for the apartments, they should try to get aggregated consumption data or whole-building energy information from the utility company. If they can't get this information, one option is to get a minimum 10 percent sample of the apartments in each apartment line. By apartment line, the law means the apartments of similar size and floor plan that are stacked one on top of the other. Another option is to use some default values provided by the city. The default values represent kilowatt hour usage per calendar month for a generic apartment. These numbers are averages provided by the New York State Energy Research and Development Authority. These default values represent a very poorly performing building. The numbers from the sample or default value methods would be entered into Portfolio Manager in combination with the usage data from the common areas to generate a benchmark number.

ALI: The EPA's Portfolio Manager provides a single number to report. If an owner wanted a more comprehensive energy benchmarking report, are there other tools an owner can use?

PV: For those interested in understanding their buildings' energy use beyond the city's basic requirements, there are other, more sophisticated benchmarking tools available. These tools can offer a variety of indices of energy use, rank buildings, and even indicate which major end uses—such as seasonal heating and cooling, and nonseasonal baseloads—are using energy efficiently and which aren't. Such tools provide the user with the extra information to identify energy- and money-saving opportunities.

For instance, our company ran a before-and-after benchmark of a heating system replacement for a relatively small multifamily building in New York City. Our tool was able to model a projection of what the energy use for that space or building should be, based on previous performance. Because of the accuracy of our tool's model, we were able to see when the heating system had started to break down, and where the energy usage had exceeded the model simply because the heating system had been working that much harder. When the owners installed a new heating system, the tool showed that their energy usage fell below what the model had previously predicted for that space.

Energy Auditing and Retro-commissioning

ALI: Can you explain energy auditing and retro-commissioning in general? What do these mean under LL 87?

PV: An energy audit sets out to identify cost-effective system improvements and operational changes that will save energy and money at a property. Qualified auditors visit the building to assess all the energy-related systems, including heating and cooling, lighting, air distribution and ventilation, hot water systems, and the building envelope; they also consult with maintenance personnel and residents for feedback on potential issues. The auditors then generate a report analyzing the findings of the site survey and recommending energy-efficiency measures for the property. Information on incentives available to help pay for the measures is generally also included.

Retro-commissioning is a process of optimizing the performance of building systems by correcting deficiencies. Where retrofitting might require, for example, replacing a boiler or HVAC unit, retro-commissioning involves making sure that the existing equipment is performing to specification; this may require tuning controls, cleaning filters, or making appropriate repairs, relatively simple measures that can be very effective in saving energy.

Under LL 87, covered buildings will be required to undergo an energy audit, followed by a retro-commissioning process, and submit reports on both, every 10 years, in years corresponding to the last digit of their tax block number. For example, buildings with tax block numbers ending in "4" will be required to report in 2014, 2024, and so on. This requirement begins in 2013, so the first group of buildings to report will be those with tax blocks ending in "3."

ALI: What are other compliance issues for LL 87 that owners should be aware of?

PV: To comply with the law, building owners must have an energy audit conducted by an approved auditor. Then, based on the audit report, an "approved retro-commissioning agent" will implement the retro-commissioning measures, and provide the owner with an appropriately certified report. The final definition of an approved retro-commissioning agent by the Department of Buildings is still pending. Both documents must then be submitted to the Department of Buildings between Jan. 1 and Dec. 31 of the reporting year. Also, audits and retro-commissioning may be done in advance, as long as each takes place no more than four years before the report is submitted; the retro-commissioning process must follow and be based on the audit.