



## GREENER, GREATER BUILDINGS PLAN OUTREACH

Version 5 2013

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IntelliGreen Partners

# LOCAL LAW 87: ENERGY AUDITS & RETRO-COMMISSIONING





# **LOCAL LAW 87: ENERGY AUDITS & RETRO-COMMISSIONING**

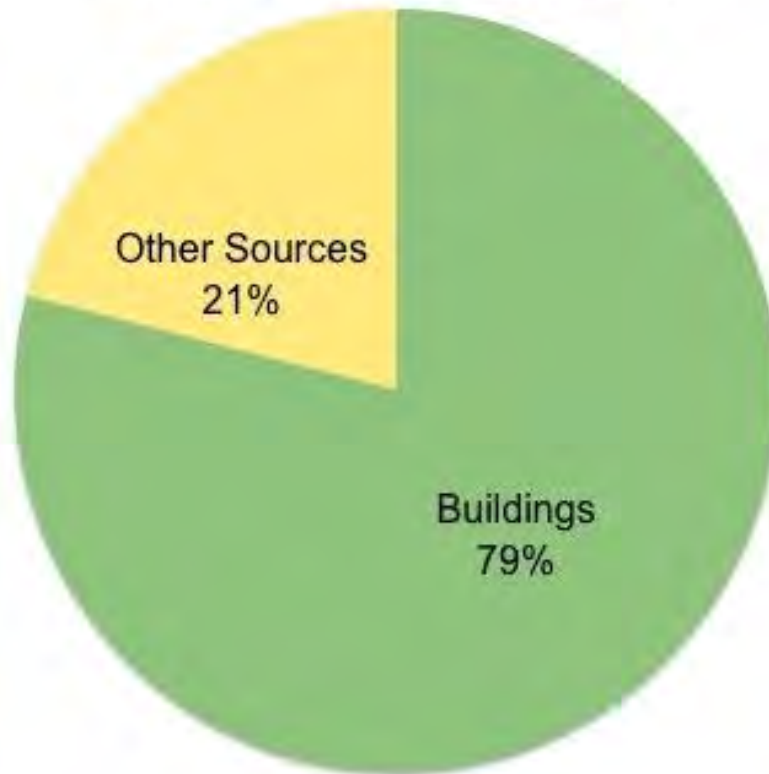
# GREENER, GREATER BUILDINGS PLAN

- Improve the energy and water efficiency of New York City's largest buildings
- Requires energy audits and retro-commissioning every 10 years
- [www.nyc.gov/ggbp](http://www.nyc.gov/ggbp)
- [www.urbangreencouncil.org/ggbp/education](http://www.urbangreencouncil.org/ggbp/education)

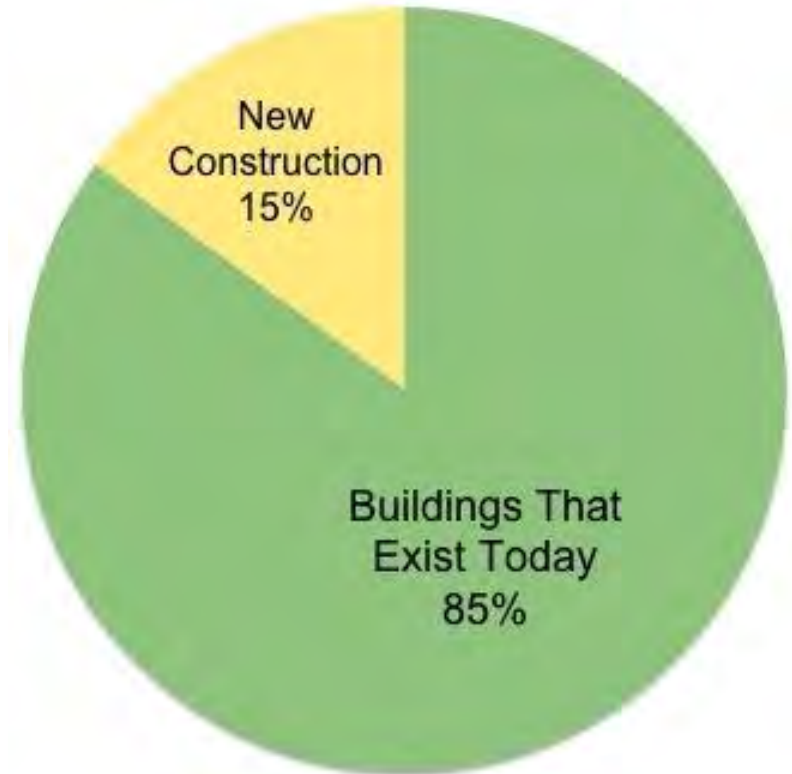


# INTRODUCTION – WHY EXISTING BUILDINGS?

## NYC Greenhouse Gases



## NYC Buildings in 2030



# INTRODUCTION – WHAT IS LOCAL LAW 87?

## Energy Audit

- Analysis of a building's energy equipment, systems, envelope, and operations
- Identifies cost effective options to save energy
- Provides recommended strategies and cost estimates

## Retro-commissioning

- Re-tuning systems in an existing building to improve efficiency

## Examples:

- Checking HVAC controls
- Calibrating lighting sensors
- Ensuring pipe insulation

**LOCAL LAWS  
OF  
THE CITY OF NEW YORK  
FOR THE YEAR 2009**

No. 87

Introduced by Council Member Gennaro, the Speaker (Council Member Quinn), Brewer, Comrie, Dickens, Garodnick, Gioia, James, Koppell, Lappin, Mitchell, Palma, Recchia Jr., Reyna, Rivera, Stewart, Liu, Yassky, Sears, White Jr., Mendez, de Blasio, Mark-Viverito, Vann, Avella, Vacca, Gerson, Jackson, Gonzalez, Ferreras, Vallone Jr., Barron, Arroyo, Crowley and Mealy

**A LOCAL LAW**

**To amend the New York city charter and the administrative code of the city of New York, in relation to requiring energy audits and retro-commissioning of base building systems of certain buildings and retro-fitting of certain city-owned buildings.**

*Be it enacted by the Council as follows:*

Section 1. Chapter 3 of title 28 of the administrative code of the city of New York is amended by adding a new article 308 to read as follows:

**ARTICLE 308  
ENERGY AUDITS AND RETRO-COMMISSIONING OF BASE BUILDING  
SYSTEMS**

**§28-308.1 Definitions.** *As used in this article, the following terms shall have the following meanings:*

**BASE BUILDING SYSTEMS.** *The systems or subsystems of a building that use energy and/or impact energy consumption including:*

1. *The building envelope.*
2. *The HVAC (heating ventilating and air conditioning) systems.*
3. *Conveying systems.*

# INTRODUCTION - REQUIREMENTS

Energy Efficiency Report (EER),  
submit forms for:

- Energy Audit
- Retro-commissioning Report

All “base building” energy systems  
covered:

- HVAC (Heating, Ventilation and Air Conditioning)
- Electrical and Lighting
- Domestic Hot Water
- Building Envelope
- Conveying Systems



# INTRODUCTION – ENFORCEMENT

- NYC Department of Building is responsible for enforcement
- Failure to comply with LL 87 subjects properties to fines of \$3,000 the first year and \$5,000 for each additional year
- DOB intends to conduct random reviews of documentation







# GETTING STARTED

## Step 1: Determine if your property is subject to the energy audits and retro-commissioning law.

• [www.nyc.gov/LL87](http://www.nyc.gov/LL87)

- A single building on a lot over 50,000 square feet
- 2 or more buildings on the same tax lot that together are more than 100,000 square feet
- 2 or more buildings held in condo ownership that together are more than 100,000 square feet

Local Law 87 Covered Buildings List -  
Audits and Retro-commissioning

BBL	Boro	Block	Lot	Building Square Footage *	Number of Buildings	Tax Class	Street Number	Street Name	Boro	Zip	Year Due
1000010010	1	00001	0010	2725731	1	4	1	GOVERNORS ISLAND	MANHATTAN	10004	2021
1000020002	1	00002	0002	105368	0	4		MARGINAL STREET	MANHATTAN	10004	2022
1000030001	1	00003	0001	945425	1	4		BATTERY PARK	MANHATTAN	10004	2013
1000047501	1	00004	7501	2621563	1	2	1	WATER STREET	MANHATTAN	10004	2014
1000057501	1	00005	7501	1354691	1	2	125	BROAD STREET	MANHATTAN	10004	2015
1000087501	1	00008	7501	169061	1	2	39	WHITEHALL STREET	MANHATTAN	10004	2018
1000090001	1	00009	0001	845018	1	4	34	WHITEHALL STREET	MANHATTAN	10004	2019
1000090014	1	00009	0014	544015	1	4	17	STATE STREET	MANHATTAN	10004	2019
1000090029	1	00009	0029	896956	1	4	24	WHITEHALL STREET	MANHATTAN	10004	2019





# GETTING STARTED

## Step 2: Determine your property's reporting year.

Last digit of tax block number:	3	4	5	6	7	8	9	0	1	2
Year first energy efficiency report must be complete by 12/31 of:	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022

Every 10 years, owners must complete an Energy Audit and Retro-commissioning, and file an Energy Efficiency Report (EER).

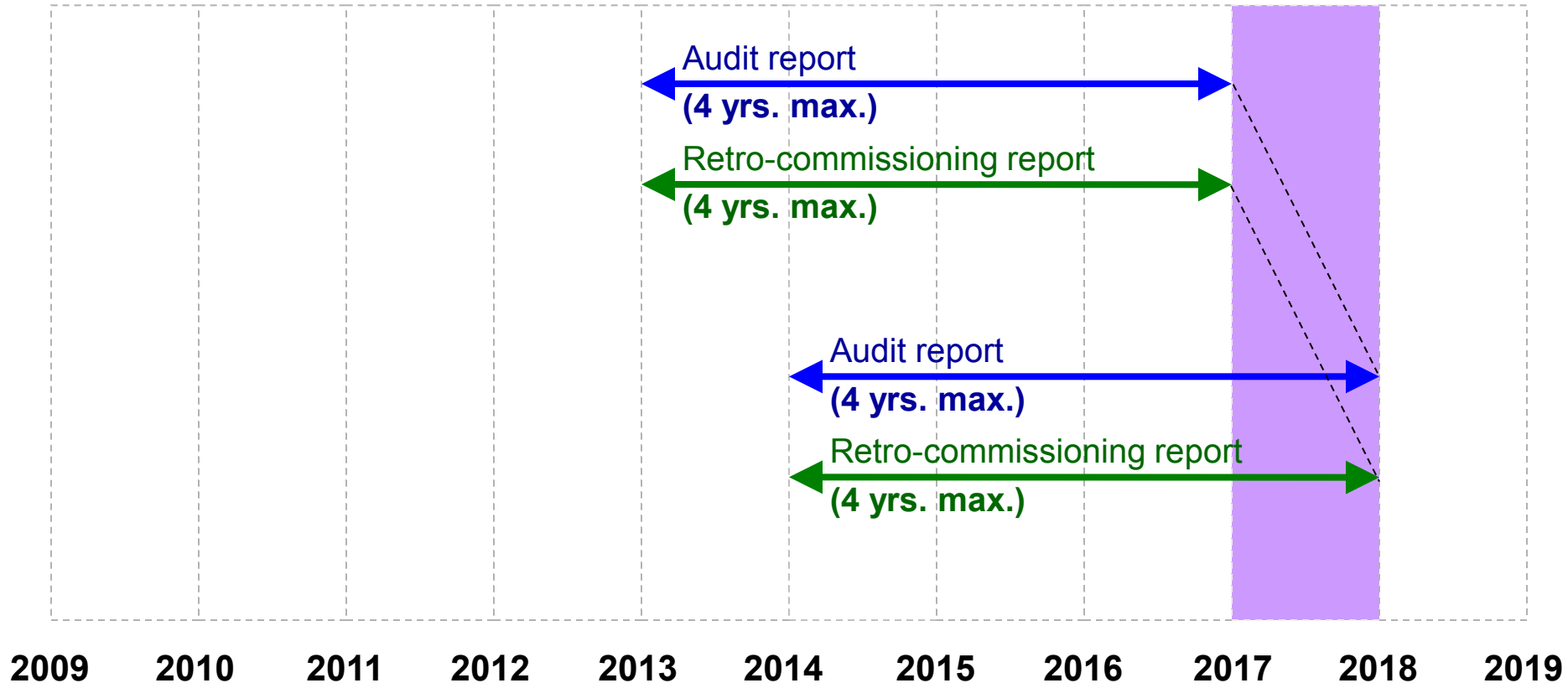
Staggered deadlines are based on the last digit of a building's **tax block number**.



# GETTING STARTED

## Step 2: Determine your property's reporting year.

Standard Compliance Timeline: 2017 EER – Filing block \*\*7





# GETTING STARTED

## Step 3: Decide whether to pursue early compliance under the law.

- EER can be filed in 2013, prior to its scheduled filing year
- The next filing is due 10 years after its first scheduled filing year

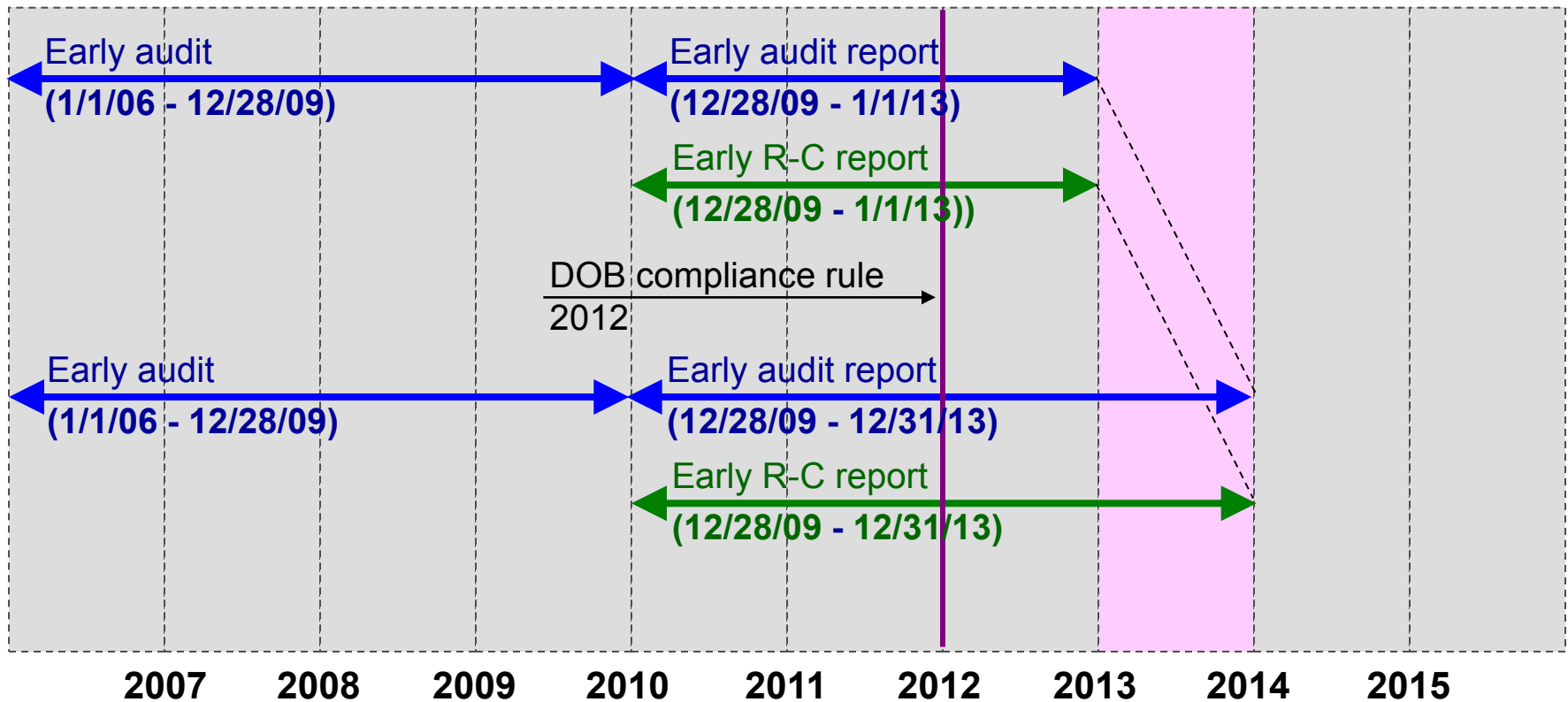
EEM #	Energy Efficiency Measure Description	Installed Cost	Savings			Payback (years)	SIR
			mmBtu	kWh	\$		
1	Install Temperature Sensors in Apartments	\$18,000	714	-	\$9,537	1.9	6.3
2	Install High-efficiency DHW Condensing Boiler	\$69,000	803	-	\$8,526	8.1	1.3
3	Steam Trap Replacement/Repair	\$12,500	202	-	\$2,683	4.7	1.0
4	Insulate bare Steam and DHW piping in Mechanical Rooms	\$700	38	-	\$506	1.4	6.2
5	Install Low flow Bathroom Faucet Aerators	\$200	23	-	\$308	0.6	9.6
6	Install Bi-level Lighting	\$7,500	-11	6,846	\$1,384	5.4	1.6
7	Replace T12 fluorescent fixtures with T8 fixtures	\$5,700	-7	4,165	\$835	6.8	1.7
8	Apartment CFL Distribution	\$840	-78	32,795	\$6,274	0.1	52.4
9	Install Occupancy Sensors	\$1,500	-5	2,783	\$621	2.4	3.5
10	Replace Incandescent Lamps in Common Areas	\$760	-9	5,382	\$1,070	0.7	9.9
Total		\$116,700	1,670	51,971	\$31,743	3.7	2.6



# GETTING STARTED

## Step 3: Decide whether to pursue early compliance under the law.

Early Compliance Timeline: 2013 EER – Filing any block



# GETTING STARTED

**Step 4: Determine if your property is exempt from all or part of the law.**

Exemption from **both** Energy Audit and Retro-commissioning

- Less than 10 years old by reporting year
- Undergone “substantial rehabilitation” within 10 years of reporting year

*Substantial rehabilitation projects are defined as those that meet all three of the following scope of work items: (1) replacement of heating system (2) work on at least 75% of the units' (kitchens and/or bathrooms) and (3) major work involving the building envelope such as replacing the roof or windows, adding insulation, and implementing air sealing measures.*

# GETTING STARTED

**Step 4: Determine if your property is exempt from all or part of the law.**

## Energy Audit Exemptions

- EPA ENERGY STAR® label for at least 2 of the last 3 years
- Ineligible for ENERGY STAR® rating, but within top 25% of efficiency in class for at least 2 of the last 3 years
- LEED-EBOM („09+) certification within 4 years prior to reporting year



# GETTING STARTED

**Step 4: Determine if your property is exempt from all or part of the law.**

## Energy Audit Exemption for “simple buildings”

- This exemption is only available for first reporting year
- “Simple buildings” either lack a central AC system or have a system that cools less than 10% of the indoor area.
- To qualify, building must have or implement 6 of 7 energy and water efficiency elements written in the law



# GETTING STARTED

**Step 4: Determine if your property is exempt from all or part of the law.**

## Retro-commissioning Exemptions

- Earned LEED for EBOM 2009 certification in the last 2 years, and earned two commissioning points





# GETTING STARTED

**Step 4: Determine if your property needs an extension of time to comply with the law.**

Time Extensions available if:

- Building is unable to complete the energy audit and retro-commissioning prior to report due date despite good faith efforts
- Building is suffering from financial hardship as defined by LL 87
- Extensions must be filed by October 1 of the year the Energy Efficiency Report is due

# GETTING STARTED

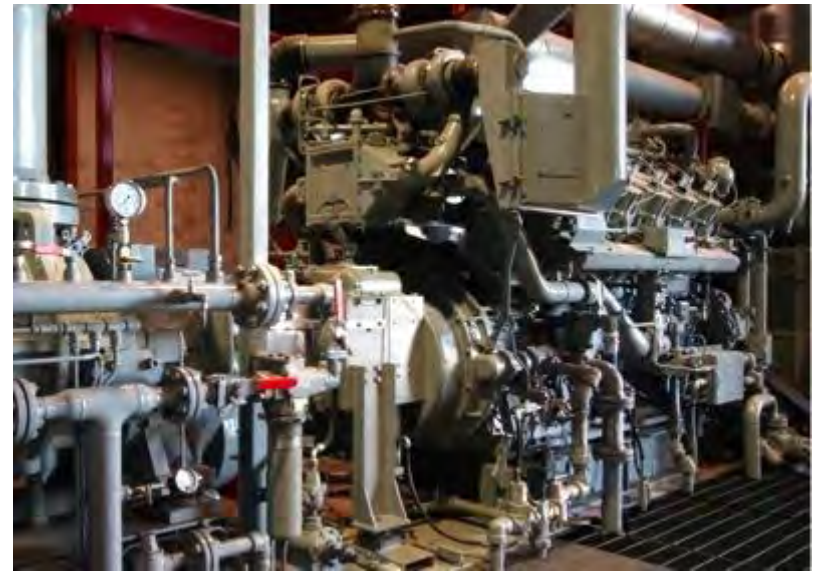
**Step 5: Select your Greener, Greater Buildings Plan administrator (“GGBP project manager”), the person in your management team structure responsible for managing compliance with the law.**

- Property manager, superintendent, or operator knowledgeable about building operations
- Property manager, superintendent, or operator who receives training
- Consultant Owner’s Representative



# GETTING STARTED

**Step 6: Decide whether to do your energy audit at the same time as retro-commissioning.**



## Step 7: Search for and select a qualified energy auditor.

- Must be a licensed architect or professional engineer OR be a registered design professional with DOB and meet the other qualifications listed in the law and final rule
- Seek a vendor who has done energy audits in buildings of similar size and type to yours
- Consider NYSERDA FlexTech and MPP vendors
- The auditor must not be a member of the building staff

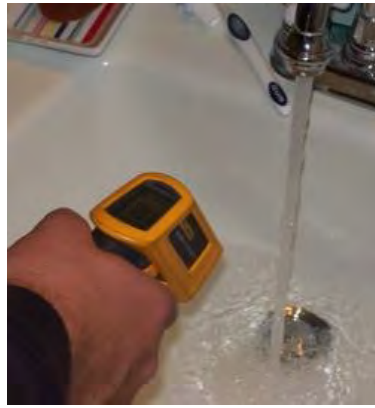




# ENERGY AUDITS

**Step 8: Begin your energy audit at least 12 months before it is due.**

- Audit must be equivalent to ASHRAE Level II, 2011 (minimum):
  - Interviews with operating personnel
  - Reviews of utility bills and other operating data
  - Detailed analysis of energy consumption for each base building system
- If you plan to comply early, start your audit and retro-commissioning now!



# RETRO-COMMISSIONING

## Step 9: Search for and select a qualified retro-commissioning agent.

- Must meet various qualifications listed in the law and final rule
- Commercial and industrial buildings should consider NYSERDA FlexTech Consultants who perform retro-commissioning
- Agent must not be a member of the building staff





# RETRO-COMMISSIONING

## Step 10: Begin your retro-commissioning 12–18 months before it is due.

- Your building must comply with the list of 28 building operation measures specified in the law
- Rule provides sample rates for each required measure, as well as thresholds for what types of equipment are subject to RCx
- You are required to correct any deficiencies / noncompliant issues prior to submitting the Energy Efficiency Report (EER)
  - Specific exceptions are listed in the Rule





# SUBMIT ENERGY EFFICIENCY REPORT

**Step 11: Submit your Energy Efficiency Report and pay filing fee by the end of the reporting year.**

This report will consist of the following, as applicable:

- DOB Energy Audit Form
- DOB Retro-Commissioning Form
- Proof that your property is exempted from one or both reports under one of the exemptions listed in Step 4

OR

- Show proof that your property opted for the early compliance path under the law

# SUBMIT ENERGY EFFICIENCY REPORT

**Step 12: Maintain records for 11 years from the required submission date.**



**CONGRATULATIONS!  
YOU COMPLIED WITH  
LOCAL LAW 87!**

# GETTING VALUE

## Step 13: Take advantage of NYSERDA and Con Edison incentives.



### **NYSERDA Contacts:**

#### **Commercial and Industrial**

Vanessa Ulmer

[vmu@nyserda.ny.gov](mailto:vmu@nyserda.ny.gov)

212-971-5342, Ext. 3018

#### **Multifamily**

Ryan Romard

[rmr@nyserda.ny.gov](mailto:rmr@nyserda.ny.gov)

212-971-5342, Ext. 3614



### **Con Edison Contacts:**

Energy Efficiency Green Team

[conEd.com/energyefficiency](http://conEd.com/energyefficiency)

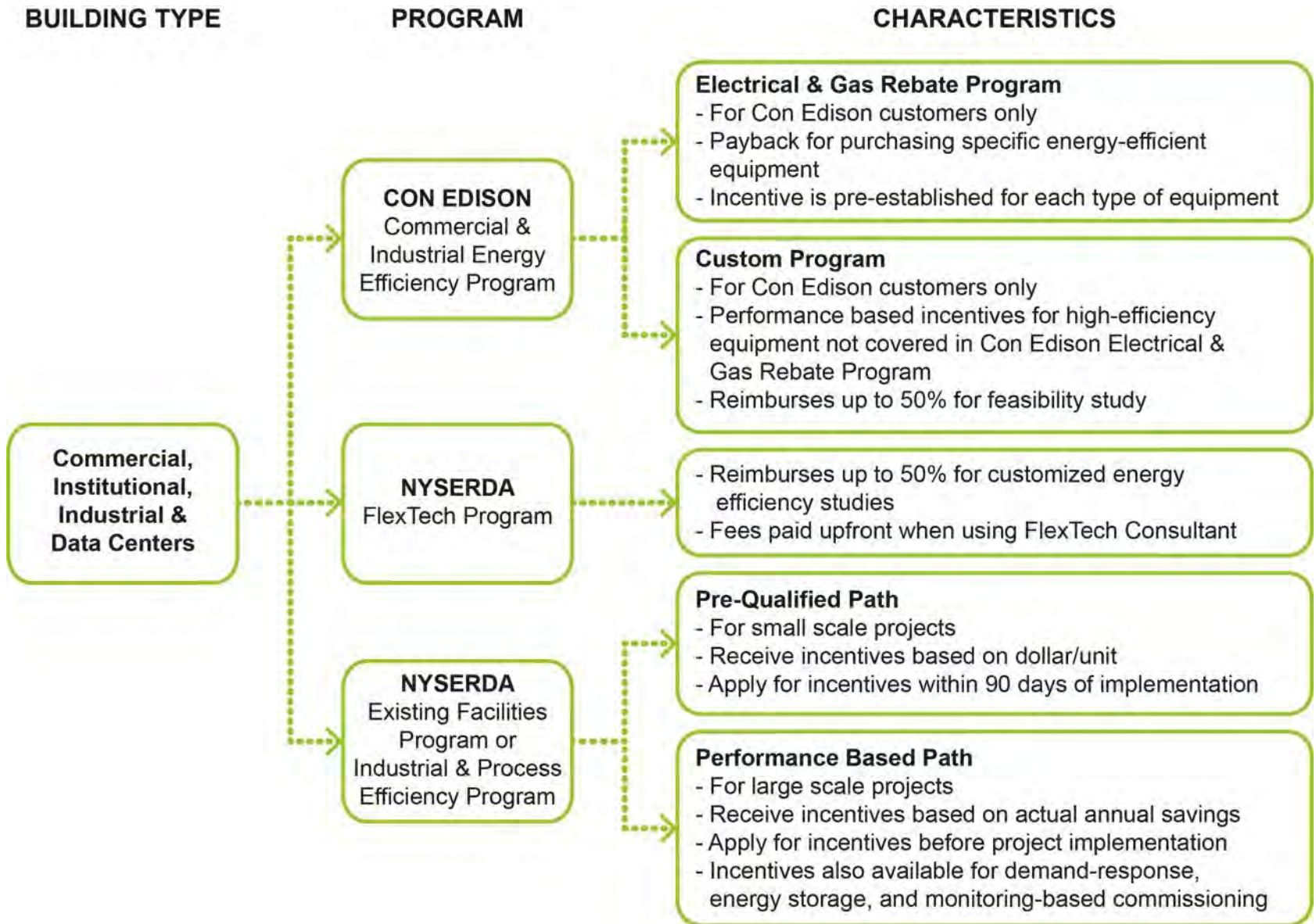
#### **Commercial and Industrial**

877-797-6347

#### **Multifamily**

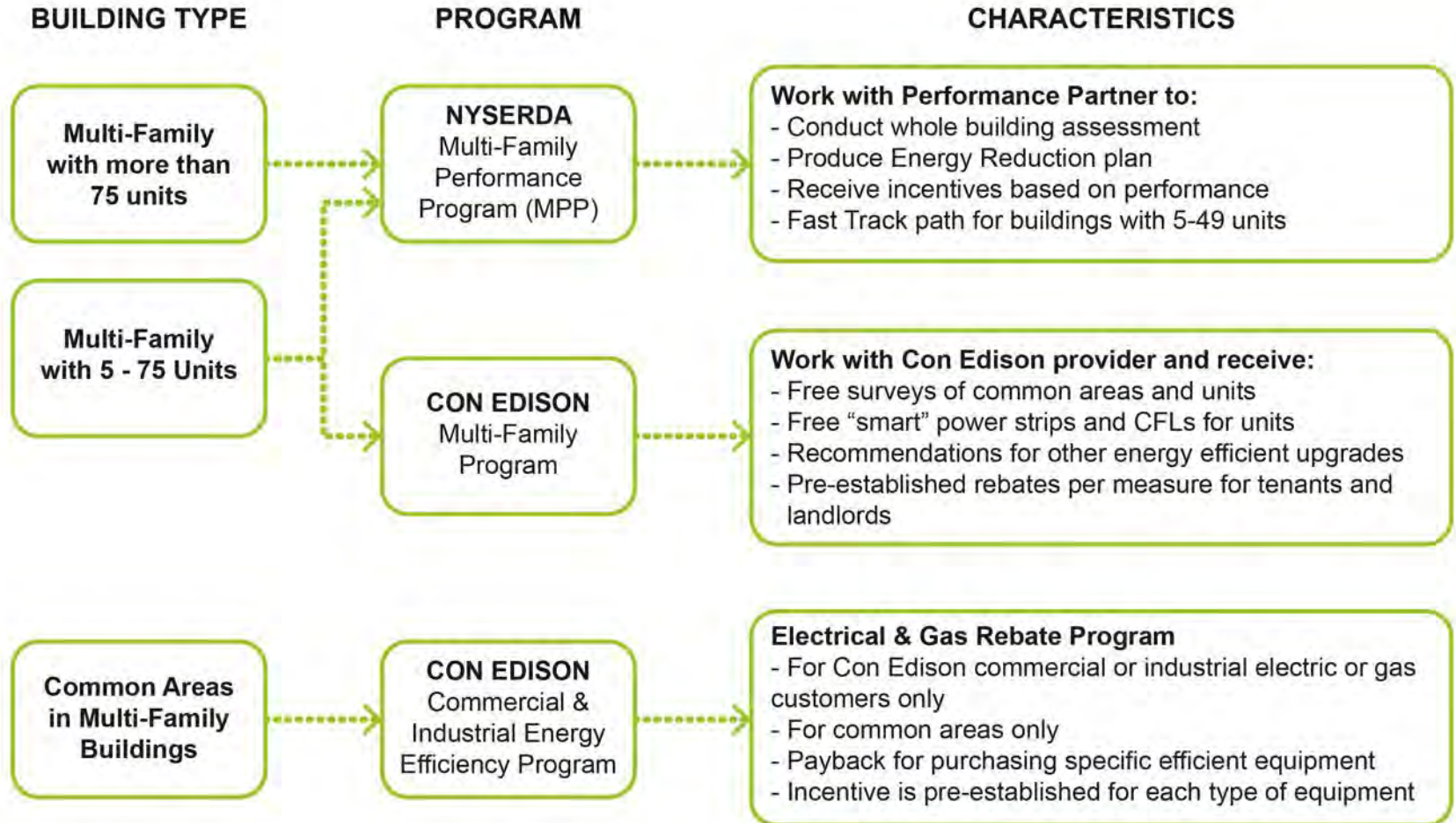
877-870-6118

# GETTING VALUE





# GETTING VALUE







# GETTING VALUE

Program	Type of Work					
	Large Projects	Small Projects	Audit & Feasibility Studies	Pre-Approved Equipment	Custom Equipment	Incentive
<b>Commercial, Institutional, Industrial &amp; Data Centers</b>						
NYSERDA FlexTech	✓	✓	✓			50% of the cost of the analysis paid
NYSERDA Existing Facilities Program & Industrial & Process Program (Performance Based)	✓				✓	\$30k - \$2M per project (up to \$6M per year for IPE)
NYSERDA Existing Facilities Program & Industrial & Process Program (Pre Qualified)		✓		✓		\$30k elec. & \$30k gas per year
CON EDISON Energy Efficiency Elect. & Gas Rebate	✓	✓		✓		Pre-est. per unit savings for each measure
CON EDISON Energy Efficiency: Custom	✓	✓	✓		✓	Max. \$50k elec. or gas; \$67k elec. & gas
<b>Residential (Multifamily)</b>						
NYSERDA Multi-family Performance Program	✓	✓			✓	Up to \$1,000/unit
CON EDISON Multifamily		✓			✓	Pre-est. per measure rebates

# GETTING VALUE

## Step 14: Get the most out of the energy audit by implementing low and no-cost recommendations.

- Review report with Auditor and discuss options and action plan
- Use the energy audit as a capital planning tool for future investments
- Compare energy audit and retro-commissioning recommendations



# GETTING VALUE

## Step 15: Make the best of retro-commissioning by hiring an experienced contractor.

- Review the report to ensure all 28 building operation measures were covered thoroughly
- Keep building superintendent or operator involved
- Document findings and create an operations manual for future reference



# GETTING VALUE

## Step 16: Invest in staff training.

- GPRO: Green Professional Building Skills Training, Operations & Maintenance Essentials – [gpro.org](http://gpro.org)

- BPI: Building Performance Institute – [bpi.org](http://bpi.org)

Provided by Association for Energy Affordability Inc. – [aea.us.org](http://aea.us.org)

- BOC: Building Operators Certificate – [cunybpl.org](http://cunybpl.org)

The logo for G|PRO features the word "G|PRO" in a large, black, sans-serif font. A vertical green bar is positioned between the "G" and the "P".

# THANK YOU!

New York City's Office of Long-Term  
Planning and Sustainability



New York City Department of Buildings



New York State Energy Research and  
Development Authority (NYSERDA)



Con Edison of New York

