BuildSmart 2025

Program Guidelines

Last updated July 2023

Table of Contents

SECTION I: INTRODUCTION

Recent Executive Orders and state legislation have underscored New York State's commitment to addressing climate change head-on and has reaffirmed its position as a national leader in promoting clean energy solutions. Energy efficiency continues to be a cornerstone of the State's climate and energy policy. Governor Hochul's Executive Order 22 builds on previous success, streamlining NY State's climate goals to build a cleaner, more resilient, and affordable energy system for all New Yorkers.

BuildSmart, a program of the NY Power Authority, has supported state entities in meeting NY State's ambitious energy efficiency goals for over a decade. Key NYS policies include:

- **Executive Order 22 (2022)** streamlines and expands on many NY State energy and sustainability goals including the goal of achieving 11 TBTU of energy savings at state facilities by 2025. It directs Affected Entities to work with NYPA to achieve their allotted portion of the overall energy savings target and to consult the BuildSmart 2025 Program Guidelines for guidance on meeting their target. It also establishes NYPA's NYEM as the system of record for all energy data.
- **Climate Leadership and Community Protection Act (CLCPA)**, A.8429/S.6599, signed on July 18, 2019, adopted measures to put the state on a path to reduce statewide GHG emissions by 85% by 2050. Included in CLCPA was a requirement that the NYS Climate Action Council develop a Scoping Plan, which includes the goal of achieving 185 TBTU of energy savings by 2025.
- **New Efficiency: New York**, jointly released by DPS and NYSERDA in 2018, recommended a mix of strategies to meet a target of 185 TBTU of energy savings by 2025. The report included a goal of 11 TBTU of building site energy savings for state entities and directed NYPA to create a mechanism to collect project-level energy savings data to track progress toward the goal.
- **Executive Order 166 (2017)** mandated all state entities reduce GHG emissions by 40% by 2030, and 80% by 2050. EO 166 also directed the DEC and NYSERDA to develop an approach to emissions reduction and accounting for state entities.
- **Executive Order 88 (2012)** mandated 20% improvement in energy efficiency in state buildings by 2020, as measure by source energy use intensity (BTU/sqft). EO 88 also resulted in the BuildSmart NY initiative, which sought to accelerate energy efficiency in state buildings, and later evolved into NYPA's BuildSmart program.

NYPA'S BUILDSMART PROGRAM

BuildSmart is an evolution of the original BuildSmart NY initiative, which was created in response to EO 88. EO 88 designated NYPA to coordinate compliance and drive state facilities to the 20% reduction target. Within NYPA, a centralized team was established to administer EO 88 and was responsible for a number of tasks including: development of annual milestones; engagement of key stakeholders; assessment and mitigation of risk; providing strategic and technical assistance and oversight to state entities; reporting progress to the Governor's Office and the public; and creating guidance to facilitate compliance.

BuildSmart continues and enhances these responsibilities to assist EO 22 Affected Entities as they plan for, act on, and track progress to individual and state-level energy savings targets.

SECTION II: BUILDSMART 2025

EO 22 establishes "BuildSmart 2025" as the collective effort by Affected Entities to reduce site energy use by 11 TBTU by 2025 from a 2015 baseline – a goal that was originally set in New Efficiency: New York. BuildSmart 2025 leverages the resources and expertise of NYPA's BuildSmart program to set individual Affected Entity energy savings targets, establish intermediate deliverables, and create supporting resources to set Affected Entities on a path to meeting the collective EO 22 energy goal.

EO 22 also establishes NYPA's NYEM as the system of record for all energy data from covered facilities and requires that all Affected Entities ensure their energy data is entered in NYEM. Energy saving project data entered into NYEM is used to demonstrate progress toward an Affected Entity's portion of the 11 TBTU goal.

Members of NYPA's BuildSmart Program Management & Implementation Team (PMIT) and associated contact information are listed below.

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WHO IS SUBJECT TO BUILDSMART 2025?

All EO 22 Affected Entities are subject to the requirements of EO 22 and BuildSmart 2025. A full list of EO 22 Affected Entities can be found in Appendix B.

The underlying policies established in these Program Guidelines are rooted in industry best practices and are therefore generally relevant and applicable to all Affected Entities. That said, some BuildSmart 2025 requirements target those Affected Entities with large building portfolios. Affected Entities with only a few small facilities or those that lease space may find that certain requirements are not applicable. In these instances, an exemption from a particular requirement or deliverable may be requested. Exemption requests must be made via email to the BuildSmart Program Manager and include reasonable justification. **Most exemptions made will be provisional**, and the Affected Entity is expected to notify the BuildSmart Program Manager of any changes to circumstances that would impact an approved exemption. Without a written exemption, all EO 22 Affected Entities will be expected to comply with the deadlines, deliverables, and targets set in these Program Guidelines. More information, including examples of reasonable justifications, is provided through the Program Guidelines and in Appendix H.

APPROACH

The BuildSmart 2025 Program Guidelines build on previous guidance developed in support of NY State climate policies and are intended to provide clarity around the responsibilities of EO 22 Affected Entities in meeting the collective 11 TBTU savings goal. The Program Guidelines establish deliverables and deadlines grounded in industry best practices to direct Affected Entities toward their energy savings target.

Development of the Program Guidelines has been a highly interactive process. When developed originally for BuildSmart NY, more than 50 executives and facility/engineering managers from a dozen state entities worked with NYPA to provide input. As the Program Guidelines were updated, NYPA incorporated feedback from additional state entities and lessons learned.

The Program Guidelines are a living document and may be updated periodically to address the changing landscape of energy efficiency and to capture any new opportunities that arise during program administration. Any substantive changes will be communicated to Affected Entities through the GreenNY Council monthly newsletter and other avenues as appropriate.

INDIVIDUAL ENERGY SAVINGS TARGETS

EO 22 requires Affected Entities to collectively achieve 11 TBTU of site energy savings in state facilities by December 31, 2025. The PMIT has divided that collective goal, establishing individual energy savings targets for each Affected Entity. See Appendix D for more information. For Affected Entities that did not submit baseline data, a placeholder target was established. Affected Entities may request their individual energy savings target at any time by emailing the BuildSmart Program Manager.

Progress toward individual targets will be measured by project savings documented in NYEM. Affected Entities may include any project completed after January 1, 2015. In addition, projects at or beyond 30% design may be included. Methods to calculate project energy savings are described in Appendix E.

COVERED FACILITIES

For the purposes of BuildSmart 2025, a Covered Facility is defined as any space occupied by an Affected Entity that receives any fuel. Owned, managed, and leased space is included in this definition. This includes both conditioned spaces and unconditioned spaces (e.g., warehouses, barns, garages, etc.). **Affected Entities must report on monthly energy consumption and energy saving projects for any Covered Facility over 5,000 sqft**. Affected Entities may include Covered Facilities that fall at or below the 5,000 sqft threshold in reporting if desired.

Covered Facilities may be exempt from certain BuildSmart 2025 requirements at the discretion of the PMIT and on a case-by-case basis. Requests for exemption must be emailed to the BuildSmart Program Manager for review and approval, along with any backup documentation substantiating the exemption claim. For example, exemptions may be considered for certain BuildSmart 2025 requirements due to limited savings opportunities, significant technical barriers such as in historic buildings, limited use (e.g., seasonal or storage), or very low energy use. See Appendix H for more information on exemptions.

LEASED SPACES

Leased spaces are subject to BuildSmart 2025 requirements, however there may be exemptions and adjustments to those requirements. In general, leased space is exempt from BuildSmart 2025 only if the Affected Entity does ***not*** have access to utility bill information and/or the Affected Entity does ***not*** have control of the equipment, space, or infrastructure according to the lease. See Appendix H for more information on exemptions.

OGS leased facilities: Affected Entities that lease space from OGS are exempt from all requirements *for those leased spaces*. OGS is responsible for meeting BuildSmart 2025 deliverable and deadlines as the owner of the buildings. The Affected Entity is still responsible for non-OGS space.

DELIVERABLES AND DEADLINES

The Program Guidelines establish deliverables and deadlines that are meant to guide and assist Affected Entities in making progress toward their individual energy savings targets. These requirements seek to ensure that critical steps are accomplished with adequate time to fully implement identified energy savings strategies. **Each Affected Entity is responsible for capturing and reporting their data and for ensuring their data is complete and accurate.** In addition, each Affected Entity is responsible for ensuring that deliverables meet the minimum requirements established in these Program Guidelines. Affected Entities are encouraged to pursue broader, deeper, or additional opportunities to improve their operations and energy efficiency.

The timeline below provides a snapshot of deliverables and deadlines. Additional context is provided later in the Program Guidelines.

RECURRING SUBMISSIONS	
Annual – October 1	• Update energy consumption in NYEM *monthly energy consumption, all fuel types*
Biannual – April 1, October 1	• Update project pipeline in NYEM *energy savings for completed projects and/or projected energy savings for projects at or beyond 30% design*
ONE-TIME SUBMISSIONS	
October 1, 2020	• Energy auditing plan complete
October 1, 2021	• O&M plan complete
November 30, 2022	• Building-level submetering plan complete (buildings >25,000 sqft)
October 1, 2023	• Building energy audit or RCx study complete (buildings >5,000 sqft) • Energy master plan complete (utilities >$300,000/yr)
December 31, 2025	• Building-level submeter installation complete • LED retrofit (indoor and outdoor) complete

If you are an Affected Entity that has missed a deadline, contact the BuildSmart Program Manager to discuss an extension or exemption.

PROGRAM GOVERNANCE

In keeping with previous policy, EO 22 directs each Affected Entity to work with NYPA to achieve their energy savings target. It also directs NYPA to establish building energy efficiency guidelines, deliverables, and reporting to ensure progress toward the collective 11 TBTU

savings goal. NYPA meets these requirements primary through the efforts of its BuildSmart program.

As a member of the GreenNY Council, NYPA coordinates critical decisions and communications as needed to ensure BuildSmart 2025 is aligned with other EO 22 efforts. The GreenNY Council is led and co-chaired by:

- Department of Environmental Conservation (DEC)
- Division of the Budget (DOB)
- New York Power Authority (NYPA)
- New York State Energy Research and Development Authority (NYSERDA)
- Office of General Services (OGS)

Periodically, NYPA and/or the GreenNY Council will communicate information regarding BuildSmart 2025 to Affected Entities. These communications may convey new or updated information, clarifications, deadlines and reminders. NYPA will use previous BuildSmart Affected Entity contact(s) in combination with the Sustainability Coordinator and Facilities/Energy Manager identified as part of EO 22 to populate this email list. Affected Entities may request additions and/or changes to this email list by emailing the BuildSmart Program Manager.

SECTION III: IDENTIFYING AND PRIORITIZING ENERGY SAVINGS OPPORTUNITIES

BuildSmart 2025 Program Guidelines establish deliverables and milestones that are critical to supporting Affected Entities in achieving their energy savings targets. Section I describes actions to be taken to identify energy savings opportunities. These actions provide the fundamental principles to kick-start an energy saving plan, but Affected Entities are encouraged to incorporate additional activities into their energy efficiency strategy.

Section IV defines requirements for implementing energy savings projects.

CAPTURING ENERGY CONSUMPTION

A critical first step to reducing building energy consumption is knowing the energy consumption of the Covered Facilities. This basic information can be viewed month-over-month and year-over-year to identify trends and monitor improvements in building operations.

BUILDSMART 2025 REQUIREMENT

Affected Entities must submit monthly energy consumption data for Covered Facilities for all fuel types into NYEM. **Affected Entities must report on monthly energy consumption and energy saving projects for any Covered Facility over 5,000 sqft**. Affected Entities may include Covered Facilities that fall below the 5,000 sqft threshold in reporting if desired.

- Fuel types include but are not limited to electricity, natural gas, steam, oil, propane, and kerosene.
- Energy consumption data must be submitted annually by October 1, though Affected Entities are encouraged to update their data more frequently.

There are several options available to Affected Entities for getting energy consumption data into NYEM and NYPA can help determine the best method for your circumstances. For more information, contact the BuildSmart Program Manager.

DELIVERABLES AND DEADLINES

Due annually by October 1. Affected Entities must submit monthly energy consumption data for Covered Facilities for all fuel types into NYEM annually by October 1. Each Affected Entity is responsible for ensuring their data is complete and accurate.

BUILDING-LEVEL SUBMETERING

Installing meters and sensors on buildings and building systems can provide important information about how those buildings and systems are operating and can help facility managers and other decision-makers prioritize efforts to improve operations.

For BuildSmart 2025, Affected Entities are required to have access to building-level energy consumption data for any Covered Facility over 25,000 sqft. For some, this requirement may be met using the energy data available on their monthly utility bill via their utility meter. For others, additional metering may be required to further break out individual building and fuel load.

BUILDSMART 2025 REQUIREMENT

Building-level submetering is required for Covered Facilities over 25,000 sqft for all fuels.

- Fuels include but are not limited to electricity, natural gas, steam, oil, propane, and kerosene. Steam, hot water, and chilled water generated from a central plant should also be submetered at the building-level.

DELIVERABLES AND DEADLINES

Due November 30, 2022. Each Affected Entity is required to submit a Building-Level Submetering Plan by November 30, 2022. The plan will include a list of all Covered Facilities over 25,000 sqft, identify any building-level submeters needed, and set a target date for installation. Each Affected Entity is responsible for ensuring their Building-Level Submetering Plan is complete and accurate. A Building-Level Submetering template will be circulated ahead of the deadline. Completed Building-Level Submetering Plans must be submitted via email to the BuildSmart Program Manager for review and approval.

Due December 31, 2025. All building-level submeters identified in the Building-Level Submetering Plan must be installed and operational, or have a scoped, budgeted, and schedule project for remaining building-level submetering, by December 31, 2025. Each Affected Entity is responsible for ensuring submeters are installed in accordance with their Building-Level Submetering Plan. Affected Entities must provide notice of completion via email to the BuildSmart Program Manager.

ADDITIONAL INFORMATION

Newly installed building-level submeters should be permanent – temporary data loggers do not count toward the submetering requirement. Data should be recorded in at least 15-minute intervals and include date and timestamps.

If an Affected Entity can demonstrate that submetering a specific building or group of buildings is not feasible, it may submit an exemption request via email to the BuildSmart Program Manager. Other exemptions may be considered on a case-by-case basis at the discretion of the BuildSmart Program Manager. See Appendix H for more information on exemptions.

LEASED SPACE

Leased space is exempt from the building-level submetering requirement only if one or more of the following scenarios are true.

- The Affected Entity does ***not*** have access to utility bill information
- The Affected Entity does ***not*** have control of the equipment, space, or infrastructure required to complete the submetering requirement

See Appendix H for more information on exemptions.

RECOMMENDATIONS AND BEST PRACTICES

When installing new metering equipment, Affected Entities should consider how and where to house collected data. Commonly, meter data is sent to existing applications and web-based systems such as a building management system (BMS) or energy management system (EMS). Examples of applications in-use by Affected Entities include the OGS Web Enabled Advanced Metering (WEAM) system and SUNY EnergyCAP, though many others exist in the market. Building-level meters may also be connected directly to NYEM. Contact the BuildSmart Program Manager to learn more.

IDENTIFICATION, PRIORITIZATION, AND PLANNING

Energy audits and energy master plans are effective tools for identifying and prioritizing energy efficiency upgrades in buildings. Energy audits take a concerted look at a single building's operations, providing critical insights and recommendations that enable an Affected Entity to make data-driven decisions to improve energy efficiency. Energy audits include a savings and cost analysis of all practical energy efficiency measures that meet building and campus constraints and consider the Affected Entity's financial requirements. Energy master planning has similar objectives, but takes a holistic approach, looking at facility-, campus-, or portfolio-wide building operations.

For buildings with lower anticipated energy savings opportunities, an Affected Entity may opt to perform a retro-commissioning (RCx) study in lieu of an energy audit. RCx is a process that looks at how and why a building's systems are operated and maintained as they are, then identifies way to improve overall building performance. This process accounts for natural changes in operational parameters and equipment settings, as well as other factors like changes in building use. RCx measures tend to be very cost-effective and quick to implement, making them powerful tools for achieving energy savings.

BUILDSMART 2025 REQUIREMENT

Affected Entities will conduct either an energy audit or retro-commissioning study at all Covered Facilities over 5,000 sqft. **The result will be that all Covered Facilities over 5,000 sqft will have been either audited or retro-commissioned by October 1, 2023**.

Affected Entities with utility bills greater than $300,000 will conduct an energy master plan in lieu of individual building energy audits. Energy master plans should identify and prioritize both short-term high-impact opportunities as well as establish a long-term plan to meet the requirements of EO 22.

Any energy efficiency or energy conservation measure, or combination of measures, identified in an energy audit or master plan that are deemed cost-effective are considered a Required Capital Project. **Affected Entities are responsible for completing, or making substantial progress toward completing, Required Capital Projects by December 31, 2025, or within five (5) years of project identification, whichever comes first**. See the Capital Project Implementation section for more information. Cost-effective RCx measures will be implemented within two (2) years of identification.

Note: BuildSmart NY required energy audits for facilities greater than 20,000 sqft. BuildSmart 2025 extends the requirement to include facilities greater than 5,000 sqft. Buildings that were previously audited under BuildSmart NY are ***not*** required to complete a new energy audit, assuming the audit meets all requirements of this section, unless significant operational changes have occurred. Similarly, buildings that were retro-commissioned under BuildSmart NY are ***not*** required to complete a new RCx study, assuming the study meets all requirements of this section, unless significant operational changes have occurred. The results of any previous audit and/or RCx study are subject to the implementation requirements of BuildSmart 2025.

DELIVERABLES AND DEADLINES

Due October 1, 2020. Each Affected Entity is required to submit an Energy Auditing Plan for selected Covered Facilities over 5,000 sqft by October 1, 2020. It is recommended that Energy Auditing Plans have rolling audits (e.g., half of required audits will occur in 2022 and the second half in 2023). Each Affected Entity is responsible for ensuring their Energy Auditing Plan is complete and accurate. An Energy Auditing Plan template will be circulated ahead of the deadline. Completed Energy Auditing Plans must be submitted via email to the BuildSmart Program Manager for review and approval.

Note: If you are an Affected Entity that was not subject to EO 88 and therefore missed this deadline, contact the BuildSmart Program Manager to discuss an extension or exemption.

Due October 1, 2023. All energy audits, retro-commissioning studies, and/or energy master plans must be complete by October 1, 2023. Each Affected Entity is responsible for ensuring their energy audits, RCx studies, and/or energy master plans meet the minimum requirements established in these Program Guidelines. Affected Entities must provide notice of completion along with a copy of completed plans and/or studies via email to the BuildSmart Program Manager.

Due biannually by April 1 and October 1. Affected Entities must update their energy saving project pipeline in NYEM biannually by April 1 and October 1. This includes entering any new projects and updating existing projects to ensure the Affected Entity's overall energy savings, and therefore progress toward savings target, is accurately represented. Each Affected Entity is responsible for ensuring savings are appropriately calculated using the methods outlined in these Program Guidelines and that their submitted data is complete and accurate. See the Capital Project Implementation section for more information.

Within two (2) years of identification. Implement all cost-effective RCx measures identified within two (2) years of study completion. Each Affected Entity is responsible for monitoring and ensuring compliance toward this requirement. Updates and highlights should be included in the GreenNY Annual Survey.

Due December 31, 2025, or within five (5) years of identification. Complete, or make substantial progress toward completing, any Required Capital Projects. Each Affected Entity is responsible for monitoring and ensuring compliance toward this requirement. Updates and highlights should be included in the GreenNY Annual Survey. See the Capital Project Implementation section for more information.

ENERGY AUDIT REQUIREMENTS

Energy audits and master plans are required to meet ASHARE Level 2[1] energy audit standards to comply with BuildSmart 2025. ASHRAE Level 2 energy audits provide detailed analysis of energy usage, energy costs, and building characteristics, and make recommendations for energy conservation measure that consider both the operational needs and financial constraints of the facilities and Affected Entity involved. Additional information is available in Appendix F.

Energy audits will identify measures that collectively achieve or exceed the Affected Entity's energy savings target. Audits should investigate opportunities for cost-effective electrification, air-source and ground-source heat pumps (ASHP and GSHP), and on-site renewable generation, and consider opportunities for deep energy retrofits. **A project shall be considered cost-effective if the calculated simply payback is 10 years or less OR it has a 7% or greater IRR**. More information about calculating cost-effectiveness is provided in Section IV: Capital Project Implementation and in Appendix G. The audit may also identify and recommend RCx and O&M opportunities.

In addition to traditional economic calculation, a separate cost-effectiveness calculation should be completed that includes GHG emissions reduction as additional savings (see Appendix G). Note that cost-effectiveness inclusive of GHG emissions savings is additional information for Affected Entities to consider but is not used to determine Required Capital Projects.

For buildings less than 10,000 sqft, a "virtual energy audit" may be conducted in lieu of an ASHRAE Level 2 energy audit. A virtual energy audit utilizes building data to identify retrofit solutions to increase efficiency without the need for an on-site visit. Contact the BuildSmart Program Manager for more information.

Under certain circumstances, the PMIT may grant exemptions from the audit requirements on a case-by-case basis. Exemption requests must be made via email to the PMIT and include reasonable justification. For example, an exemption may be considered in situations where substantive energy savings opportunities do not exist, such as in storage houses, salt sheds, warehouse space, horse barns, etc. See Appendix H for more information on exemptions.

RETRO-COMMISSIONING REQUIREMENTS

[1] ASHRAE's "*Procedures for Commercial Building Energy Audits*" 2011 Edition helped define terms and audit levels now commonly used in the U.S. and abroad. However, this prior work was not written in code enforceable language and Standard 211 is intended to bring additional definition to energy audit levels.

Retro-commissioning studies and recommendations will vary based on the building and equipment evaluated. However, all RCx studies should include the following:

- List of all systems and equipment including heating systems, cooling systems, controllers and sensors, motors, fans, pumps, valves and dampers, hot water systems, lighting systems, and all other related system equipment.
- List of all actions to ensure the proper functioning of equipment, and to calibrate and replace or repair equipment. This should include operating protocols, calibration, sequencing, and repairs.
- Cogeneration (cogen) / combined heat and power (CHP) review (if applicable). Any cogeneration plants currently in operation should be reviewed to ensure they are operating at maximum effectiveness.

Under certain circumstances, the PMIT may grant exemptions from the RCx requirements on a case-by-case basis. Exemption requests must be made via email to the PMIT and include reasonable justification. For example, an exemption may be considered in situations where substantive energy savings opportunities do not exist, such as in storage houses, salt sheds, warehouse space, horse barns, etc. See Appendix H for more information on exemptions.

LEASED SPACE

Leased space is exempt from the energy audit and retro-commissioning requirement only if the Affected Entity does ***not*** have access to utility bill information. In instances where the Affected Entity does ***not*** have control of the equipment, space, or infrastructure required to implement identified energy saving opportunities, an abbreviated audit may be conducted. Contact the BuildSmart Program Manager for more information.

RECOMMENDATIONS AND BEST PRACTICES

Benchmarking is a common practice of comparing similar buildings and can help an Affected Entity identify and prioritize low-performing buildings for future evaluation, helping to focus resources where they will make the greatest impact. Benchmarking can be conducted by comparing a building to a similar building in a campus or portfolio, to an earlier version of the same building (e.g., performance year-over-year), or to a selected building performance standard. ENERGY STAR Portfolio Manager, a program of the U.S. Environmental Protection Agency (EPA), is a free resource for benchmarking a variety of commercial buildings.

Affected Entities are advised to review the EO 22 goals in full and to consider including other EO 22 components, especially those that pertain to new construction, substantial renovation, and renewables, in their energy audit and master planning activities.

SECTION IV: REALIZING ENERGY SAVINGS AND ACHIEVING YOUR SAVINGS TARGET

BuildSmart 2025 Program Guidelines establish deliverables and milestones that are critical to supporting Affected Entities in achieving their energy savings targets. Section II defines requirements for implementing energy savings projects identified using the methods in Section I. Energy savings must be captured in NYEM to count toward an Affected Entity's individual energy savings target.

OPERATIONS AND MAINTENANCE

Operations and Maintenance (O&M) plans cover the decisions and actions needed to maintain and upkeep property and equipment. This includes actions like scheduling, procedures, and systems control and optimization, as well as performance of routine, preventive, predictive, scheduled, and unscheduled actions that are undertaken with the goal of increasing efficiency, reliability, and safety.

A strong O&M plan with a well-defined preventative maintenance strategy can result in significant energy savings. When preventative maintenance activities are not performed on systems and equipment, there is a decline in condition and performance which impacts operations, reduces energy efficiency, and can cause shortening of equipment life. O&M measures that support energy efficiency can generally be performed by in-house staff and typically have short or immediate paybacks.

BUILDSMART 2025 REQUIREMENT

Affected Entities will develop and implement comprehensive O&M plans for their complete building portfolio. The level and granularity of plans may vary depending on the need and nature of building portfolios. However, all O&M plans will provide a level of detail and specificity to sufficiently hold facility managers and other staff accountable for their building's performance.

Note: Affected Entities that developed O&M plans as part of BuildSmart NY, EO 88, or through NYPA's Operations and Maintenance Acceleration Program (OMAP) are ***not*** required to create a new O&M plan but should review and update their plans to reflect BuildSmart 2025 requirements and to account for any significant operational changes that may have occurred.

If you have a preventative maintenance plan that you feel meets this O&M plan requirement, contact that BuildSmart Program Manager to confirm if your existing plan qualifies.

DELIVERABLES AND DEADLINES

Due October 1, 2021. Operations and maintenance (O&M) plans must be complete by October 1, 2021. Each Affected Entity is responsible for ensuring their O&M plan meets the minimum requirements established in these Program Guidelines. Affected Entities must provide notice of completion along with a copy of the O&M plan via email to the BuildSmart Program Manager.

Note: If you are an Affected Entity that was not subject to EO 88 and therefore missed this deadline, contact the BuildSmart Program Manager to discuss an extension or exemption.

Due biannually by April 1 and October 1. Affected Entities must update their energy saving project pipeline in NYEM biannually by April 1 and October 1. **O&M and CCx[SM] actions that result in energy savings may be included in an Affected Entity's project pipeline.** This includes entering any new projects and updating existing projects to ensure the Affected Entity's overall energy savings, and therefore progress toward savings target, is accurately represented. Each Affected Entity is responsible for ensuring savings are appropriately calculated using the methods outlined in these Program Guidelines and that their submitted data is complete and accurate. See the Capital Project Implementation section for more information.

O&M PLAN REQUIREMENTS

At a minimum, an O&M plan includes the following topics:

- Energy management
- Organizational structure
- Training and staff turnover
- Budget and staffing
- Development and updating of operating procedures and preventative maintenance schedules

It's recommended that O&M plans be as specific as possible when referencing facilities and equipment to help mitigate impacts of maintenance staff turnover, and to aid in the training of new staff.

In parallel, Affected Entities will develop and deploy checklists for facilities staff that detail O&M tasks to be performed. The Affected Entity is responsible for ensuring checklists are being utilized and completed checklists must be kept on file to demonstrate compliance in the event of an external audit.

O&M plan checklists will address the following activities for all relevant equipment:

- Operating protocols, calibration, and sequencing – checking schedule of operation and setbacks; temperature and humidity setpoints; sensor calibration; heating and cooling system sequencing; confirming adequate airflow rates and lighting levels.
- Cleaning and repair – checking and cleaning HVAC equipment (vents, ducts, etc.), filters, and light fixtures; inspecting motors, fans, pumps, and their components to ensure functionality and repair as needed; checking and replacing steam traps; checking that boilers are tuned.
- Cogeneration (cogen) / combined heat and power (CHP) review (if applicable). Any cogeneration plants currently in operation should be reviewed to ensure they are operating at maximum effectiveness.

LEASED SPACE

Leased space is exempt from the O&M requirement only if the Affected Entity does ***not*** have access to utility bill information. In instances where the Affected Entity does ***not*** have control over certain aspects of the equipment, space, or infrastructure, the Affected Entity will develop an O&M plan commensurate to what it can control. For example, an Affected Entity may have the ability to make temperature setpoint changes or minor lighting upgrades, but not have control over ongoing maintenance or large HVAC equipment serving multiple tenants. Contact the BuildSmart Program Manager for more information.

ADDITIONAL INFORMATION

For the purposes of BuildSmart 2025, O&M refers only to energy- and utility-related activities and does not include things like painting, carpentry, and other building repairs.

Many O&M and CCx^{SM} measure can result in energy savings. Affected Entities will document these activities and energy savings in their project pipeline in NYEM so that they count toward their EO 22 energy savings targets. For example, regular air conditioner maintenance, such as cleaning condenser coils and correcting charge, result in energy savings according to the New York Technical Resource Manual.

Affected Entities are advised to review the EO 22 goals in full and to consider including other EO 22 components that pertain to building maintenance, such as reducing the risk of toxic chemicals and promoting biodiversity and habitat protection, in their O&M planning activities.

RECOMMENDATIONS AND BEST PRACTICES

Continuous Commissioning℠ (CCx℠) is an ongoing process to resolve operating problems, improve comfort, optimize energy use, and identify retrofit opportunities for existing commercial and institutional buildings and central plant facilities. CCx℠ goes beyond an O&M plan focusing on improving overall system control and operations for the building and meeting existing facility needs. It does not ensure that systems function as originally designed, but rather that the systems operate optimally to meet the current building requirements.[2]

CCX℠ plans will vary based on building and equipment reviewed. However, all CCx℠ plans should contain the following:

- Metering and field measurements
- Optimization of control schedules and setpoints
- Identification of potential retrofit measures and evaluation of cost-effectiveness
- Monitoring and documenting occupant comfort
- Monitoring and documenting energy performance and savings

A strong O&M plan and CCx℠ program are integral to maintaining the energy savings achieved from retrofits and large capital projects and should be implemented to support and protect the long-term investments made by Affected Entities.

Once O&M and/or CCx℠ measures are identified and implemented, it is contingent on the Affected Entity and its facility staff to sustain the improved building performance. Inclusion of staff in O&M planning is critical to successful implementation and sustained energy savings and Affected Entities are encouraged to involve the following staff or their equivalents.

- Facility manager
- Facility project engineer
- Facility maintenance specialist
- Facility service contract analyst
- Service contract manager
- Energy manager
- Business office service contract analyst (BOSCA)
- Program manager-O&M (PM-O&M)

It is recommended that Affected Entities establish regular meetings between key staff to review building operations and identify reasons for changes in energy use, areas for improvement, and potential energy savings projects and building optimization opportunities. It is also recommended that Affected Entities develop a training schedule for facilities staff as part of their O&M plan.

[2] Federal Energy Management Program: Continuous Commissioning Guidebook for Federal Energy Managers. Energy systems Laboratory, Texas A&M University system and Nebraska University, October 2002. Retrieved from http://epminst.us/otherEBER/FEMP%20Continuous%20Cx%20Guidebook.pdf

Many Affected Entities already own and operate Computerized Maintenance Management System (CMMS) applications and/or Fault Detection and Diagnostic (FDD) System but may not use the functionality that assist in meeting O&M energy efficiency objectives. Affected Entities are advised to explore and activate this functionality to support O&M plan activities. If no CMMS application and/or FDD is currently being used, a temporary spreadsheet or similar tool may provide necessary structure and accountability.

Similarly, Affected Entities should consider the use of a monitoring and control system capable of tracking energy use for electricity and primary heating fuels that can capture real-time or near-real-time data and issue alerts to facility staff.

CAPITAL PROJECT IMPLEMENTATION

Capital projects that reduce building energy consumption contribute to an Affected Entity's savings target. Affected Entities should look to their energy audits and energy master plans, and in some cases their RCx and O&M plans, for energy saving capital improvement opportunities.

BUILDSMART 2025 REQUIREMENT

Any energy efficiency or energy conservation measure, or combination of measures, identified in an energy audit or similar study that are deemed cost-effective are considered a Required Capital Project. **Affected Entities are responsible for completing, or making substantial progress toward completing, Required Capital Projects by December 31, 2025, or within five (5) years of project identification, whichever comes first.**

LED LIGHTING

All lighting (indoor and outdoor) at Affected Entity-owned properties must be retrofitted to LED, or have a scoped, budgeted, and scheduled project for replacing remaining non-LED lighting, by December 31, 2025.

All new construction or major renovation projects must specify 100% LED technologies starting no later than January 1, 2024.

DELIVERABLES AND DEADLINES

Due biannually by April 1 and October 1. Affected Entities must update their energy saving project pipeline in NYEM biannually by April 1 and October 1. This includes entering any new projects and updating existing projects to ensure the Affected Entity's overall energy savings, and therefore progress toward savings target, is accurately represented. Each Affected Entity is responsible for ensuring savings are appropriately calculated using the methods outlined in these Program Guidelines and that their submitted data is complete and accurate.

Due December 31, 2025, or within five (5) years of identification. Complete, or make substantial progress toward completing, any Required Capital Projects. Each Affected Entity is responsible for monitoring and ensuring compliance toward this requirement. Updates and highlights should be included in the GreenNY Annual Survey.

Due December 31, 2025. All lighting (indoor and outdoor) at Affected Entity-owned property must be retrofitted to LED, or have a scoped, budgeted, and scheduled project for replacing remaining non-LED lighting, by December 31, 2025. Each Affected Entity is responsible for

ensuring LEDs are installed and operational by the deadline. Affected Entities must provide notice of completion via email to the BuildSmart Program Manager.

COST-EFFECTIVENESS

Cost-effective energy efficiency and energy conservation measures identified in energy audits or energy master plans prior to 2020 are considered a Required Capital Project and must be completed within five (5) years of identification. For example, if a cost-effective energy efficiency measure was identified in a June 2019 energy audit, the Affected Entity should complete, or make substantial progress toward completing, by June 2024.

Cost-effectiveness is determined by a simple payback or internal rate of return (IRR) analysis. **A project shall be considered cost-effective if the calculated simply payback is 10 years or less OR it has a 7% or greater IRR**. When evaluating multiple mutually exclusive alternatives, the alternative with the highest IRR is considered the most cost-effective and should be selected for installation. More information and specific parameters for determining cost-effectiveness can be found in Appendix G.

In general, cost-effectiveness accounts for the following:

- Initial costs (purchase, acquisition, construction)
- Fuel costs
- Documented operation, maintenance, and repair costs
- Replacement costs
- Cash flow (including savings)
- Residual values (resale, salvage, disposal)
- Finance charges (loan interest payments)

Cost-effectiveness should be applied to comprehensive packages of measures identified during an energy audit, master plan, or similar study, rather than to individual measures. If an individual measure is not considered cost-effective but can be packaged with a group of measures to make them cost-effective in aggregate, then the entire group of measures are considered cost-effective and a Required Capital Project. For example, LED lighting projects are often very cost-effective with a quick return on investment and can be bundled with other measures to improve cost-effectiveness.

If a project has been deemed cost-effective during the design phase but is no longer cost-effective after bids are received, then the project is no longer considered cost-effective, and the implementation requirement no longer applies.

In addition to traditional economic calculation, a separate cost-effectiveness calculation should be completed that includes GHG emissions reduction as additional savings. Appendix G provides additional context including information on the DEC's value of carbon guidance. Note that cost-effectiveness inclusive of GHG emissions savings is additional information for Affected Entities to consider but is not used to determine Required Capital Projects.

SUBSTANTIAL PROGRESS

"**Substantial progress**" toward implementing a Required Capital Project has been made when one or more of the following scenarios is met.

- Retrofits and equipment replacements are at or beyond the 30% design phase.
- Retrofits and equipment replacements are added to an Affected Entity's capital plan within two (2) years of being identified
- Low- and no-cost operations related upgrades (e.g., RCx and O&M measures) are completed within two (2) years of being identified.
- Other cost-effective, energy saving projects are added to the capital plan within two (2) years of being identified.

LEASED SPACE

Leased space is exempt from the Required Capital Project requirement only if the Affected Entity does ***not*** have control of the equipment, space, or infrastructure according to the lease. For example, an Affected Entity may have the ability to make temperature setpoint changes or minor lighting upgrades, but not have control over ongoing maintenance or large HVAC equipment serving multiple tenants. Affected Entities should pursue LED retrofits in leased space and savings from LED retrofits in leased space count toward an Affected Entity's savings target.

RECOMMENDATIONS AND BEST PRACTICES

Building electrification, such as air-source or ground-source heat pumps (ASHP or GSHP), should be evaluated for cost-effectiveness. If an electric heat pump HVAC system is deemed cost-effective, then the building will switch to a heat pump system.

Sometimes known as "smart sequencing" of building upgrades, Affected Entities should consider how capital projects may interact with each other and implement those that improve building efficiency prior to investing in major system upgrades or renewables. Taking such an approach can improve overall building operations long-term and may reduce overall capital investment. For example, an Affected Entity should execute building envelope upgrades prior to investing in an HVAC replacement, since energy savings resulting from improvements in the building envelope could impact the type and sizing of HVAC equipment needed.

Affected Entities are encouraged to consider designating at least one "flagship project" which is a Required Capital Project that is creative, unique, achieves significant savings, or is notable in some other way. Updates on flagship projects can be submitted as part of the GreenNY annual survey. BuildSmart and the GreenNY Council may showcase flagship projects to highlight and share these success stories, such as in the GreenNY monthly newsletter, quarterly GreenNY Council meeting, and/or in the annual progress report.

Affected Entities are advised to review the EO 22 goals in full, especially those that pertain to new construction and substantial renovation, for more information about capital project requirements.

RENEWABLES

As an energy saving initiative, BuildSmart 2025 focuses on demand-side energy efficiency opportunities to improve operations in state facilities. However, BuildSmart 2025 will recognize certain supply-side investments in renewable energy ("renewables") as counting toward an Affected Entity's target, for the reasons stated below. Each Affected Entity is responsible for ensuring any savings are appropriately calculated using the methods outlined in these Program Guidelines and that their submitted data is complete and accurate.

- **Consistency**. EO 22 requires 100% of the electricity used by Affected Entities for their own operation to come from renewables by 2030.
- **Continuity**. The source energy goal of EO 88, which was the basis for the original BuildSmart NY effort, included renewables as an eligible technology type, as do other state GHG reduction goals.
- **Fairness**. Affected Entities that prioritize renewables over, or together with, demand-side measures due to the nature of their facilities and their economic analyses should not be disadvantaged.
- **Uniformity with the goal-setting process**. Implicit in the 11 TBTU goal were contributions from on-site renewable energy investments.
- **Clean energy market development**. Recognition of renewables in BuildSmart 2025 will encourage further renewable market development, consistent with State policy goals.

Affected Entities that are considering renewable energy as part of their climate and sustainability strategy should refer to EO 22 for additional information and requirements.

Note that while renewables can count toward an Affected Entity's BuildSmart 2025 target, renewables were ***not*** part of the methodology for establishing individual Affected Entity targets. See Appendix D for more information on how individual targets were set.

ELIGIBILITY

Energy produced by eligible renewables projects at an Affected Entity's facilities and properties count toward its energy savings target. To be eligible, the renewable project must:

- Be on-site or remote net credited[3] to an Affected Entity's facility, or be a direct off-taker to a community distributed generation (CDG) system
- Become operational or be committed between January 1, 2015, and December 31, 2025
- Use an eligible renewable resource type per Appendix A of the NY State Clean Energy Standard[4]

The retention of renewable energy certificate ("RECs") or other environmental attributes does ***not*** affect how its energy production is counted toward an Affected Entity's savings target. The purchase of RECs and/or physical energy from off-site renewables do ***not*** count toward an Affected Entity's savings target.

CALCULATING SAVINGS

All energy produced by eligible renewables projects count as energy savings. That includes electricity (kWh) and any thermal outputs (MMBTU). Electricity savings are converted to MMBTU savings in the same manner as for demand-side actions. Affected Entities may use real production data or production may be estimated using a credible renewable energy production modeling program such as those provided by a U.S. Federal or NY State agency. Production estimates must account for annual performance degradation of equipment.

[3] In general, remote net credited projects are those located at an Affected Entity's facility, but not the facility receiving the net metering credits from the electricity produced by the renewables project
[4] State of New York, Public Service Commission, *Order Adopting a Clean Energy Standard: Appendix A*, Retrieved from https://www.nyserda.ny.gov/All-Programs/Clean%20Energy%20Standard

Note the combined renewables and demand-side savings at a facility in a reporting period cannot exceed the total energy consumption at that facility during the same period. In other words, a facility cannot have negative energy consumption.

Demand (kW) savings from renewables do not contribute an Affected Entity's savings target and are not germane to BuildSmart 2025 reporting.

COGENERATION (COGEN) / COMBINED HEAT AND POWER (CHP)[5]

Energy savings that result from optimization efforts on existing CHP systems ***can*** be counted toward an Affected Entity's saving target, regardless of fuel type.

CHP systems using fossil fuels like natural gas are ***not*** considered renewable. However, CHP projects often operate at high-efficiency and reduce GHG emissions associated with electricity and/or thermal energy consumption. For this reason, an Affected Entity with an ***existing*** fossil fuel CHP system may submit a request to the BuildSmart Program Manager documenting the energy, GHG, and/or other benefits from the system and propose how its output should count toward the energy savings target. Such requests will be reviewed on a case-by-case basis and must be approved before any savings can be applied toward the target.

Energy and/or GHG efficiencies from other CHP or non-fossil-fuel-based systems may be considered on a case-by-case basis. Requests for review must be submitted to the BuildSmart Program Manager

RECOMMENDATIONS AND BEST PRACTICES

In general, an Affected Entity should only pursue a renewables project if one or more of the following conditions are met:

- All cost-effective and practical demand-side investments are already being pursued at the facility
- The facility is seasonal or has other anomalous characteristics that make it unsuitable for demand-side investments
- The renewables project is at least as cost-effective as demand-side alternatives at the facility, per the cost-effectiveness definition in Appendix G
- Renewable energy investments are a prudent part of the facility's green building certification
- The facility is implementing a net zero energy plan

SECTION V: REPORTING

The BuildSmart 2025 Program Guidelines are designed to support and guide Affected Entities toward their individual energy savings target and accelerate progress toward the collective 11

[5] CHP projects are defined as producing "on-site electric power, heating, and cooling from a single fuel source. This efficient power generation technology is also called cogeneration." See NYSERDA, *Combined Heat and Power Systems*, Retrieved from https://www.nyserda.ny.gov/Researchers%20and%20Policymakers/Power%20Generation/CHP

TBTU goal. Reporting is necessary to effectively assess progress and to direct and shape future NYS climate goals and guidance.

EO 22 requires Affected Entities to enter their monthly energy consumption and project-level savings data into NYEM. Reporting should include project-level energy savings for all projects completed in a Covered Facility after January 1, 2015. Each Affected Entity is responsible for capturing and reporting their data and for ensuring their data is complete and accurate. This data, in conjunction with related data collected from the GreenNY annual survey and external information, will be used by the GreenNY Council to develop a GHG baseline for Affected Entity operations, as mandated by EO 22.

Note: Projects completed by an Affected Entity under BuildSmart NY but within the BuildSmart 2025 timeline (project completed after January 1, 2015) ***may*** be reported and savings counted toward their individual energy savings target for EO 22.

Any Affected Entity with at least one Covered Facility is subject to BuildSmart 2025 reporting requirements. Affected Entities that do not meet this threshold should notify the BuildSmart Program Manager by email to receive written exemption. In addition, an Affected Entity or specific Covered Facility may be exempt from certain reporting requirements at the discretion of the PMIT. **Most exemptions made will be provisional**, and the Affected Entity is expected to notify the BuildSmart Program Manager of any changes to circumstances that would impact an approved exemption. Requests for exemption must be emailed to the BuildSmart Program Manager for review and approval, along with any backup documentation substantiating the exemption claim. Examples of what constitutes a justifiable exemption are noted throughout these Program Guidelines. See Appendix H for more information on exemptions.

ENERGY CONSUMPTION DATA

Affected Entities must submit monthly energy consumption data for Covered Facilities for all fuel types into NYEM annually by October. **At a minimum, Affected Entities must report on monthly energy consumption for any Covered Facility over 5,000 sqft**. However, Affected Entities may include Covered Facilities that fall below the 5,000 sqft threshold in reporting if desired. Each Affected Entity is responsible for ensuring their data is complete and accurate. There are several options available to Affected Entities for getting energy consumption data into NYEM and NYPA can help determine the best method for your circumstances. For more information, contact the BuildSmart Program Manager.

PROJECT-LEVEL ENERGY SAVINGS DATA

Each Affected Entity must maintain a list of completed and planned energy saving projects in NYEM. This list should include any and all projects that contribute to an Affected Entity's individual savings target including but not limited to capital projects, O&M, RCx and CCx^{SM}, and renewables. Any project completed after January 1, 2015, and any project at or beyond 30% design can be included. **At a minimum, Affected Entities must report on energy saving projects for Covered Facilities over 5,000 sqft**. However, Affected Entities may include projects at Covered Facilities that fall below the 5,000 sqft threshold in reporting if desired. Each Affected Entity is responsible for ensuring any savings are appropriately calculated using the methods outlined in these Program Guidelines and that their submitted data is complete and accurate. The **Affected Entity is responsible for updating and confirming the accuracy of the project pipeline list no later than April 1 and October 1 each year**, though Affected

Entities are encouraged to review their lists more frequently. Updates and highlights should be provided in the GreenNY Annual Survey.

To gain access to NYEM or for more information about entering project-level energy savings data, contact the BuildSmart Program Manager.

ADDITIONAL INFORMATION

Other milestones, deliverables, and deadlines are outlined through these BuildSmart 2025 Program Guidelines. Be sure to review the Program Guidelines in its entirety to fully understand your responsibilities. A high-level timeline of deliverables and deadlines is available in the BuildSmart 2025 section.

NYPA and BuildSmart are here to help – contact the BuildSmart Program Manager anytime to ask questions, review your responsibilities, and ensure compliance.

Affected Entities are also advised that they must complete the GreenNY Annual Survey to report on the full breadth of EO 22 requirements.

APPENDICES

APPENDIX A: COPY OF EXECUTIVE ORDER 22

No. 22

E X E C U T I V E O R D E R

Leading By Example: Directing State Agencies to Adopt a Sustainability and Decarbonization Program

WHEREAS, the State of New York ("NYS" or "State") is dedicated to the pursuit of environmental quality, sound public health, economic prosperity, and social well-being; and

WHEREAS, the use and disposal of materials, and the generation and use of energy, can have significant adverse impacts on environmental quality, public health and the climate; and

WHEREAS, the State's policies include conserving, improving, and protecting natural resources and the environment; preventing water, air, and land pollution; and enhancing the health, safety, and welfare of State residents and their overall economic and social well-being; and

WHEREAS, it is the State's policy to promote cost-effective methods to reduce energy and resource consumption, and reduce or eliminate the use of hazardous substances and the generation of hazardous substances, pollution, and waste at the source; and

WHEREAS, the State's solid waste management priorities include reducing the generation of solid waste and reusing and recycling materials; and

WHEREAS, the State's policies to advance environmental justice include improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities; and

WHEREAS, the State's procurement of commodities, services, and technology can be enhanced through State agency and public authority choices that minimize the negative environmental and health impacts of their operations; and

WHEREAS, State government can and should continue to lead in environmental stewardship through the use of green procurement and sustainable management practices; and

WHEREAS, State facilities and property can serve as testbeds for the deployment of clean energy projects and new technologies to scale, thereby accelerating widespread adoption of clean energy projects and technologies in the public and private sectors; and

WHEREAS, on July 18, 2019, the State enacted the Climate Leadership and Community Protection Act (the "Climate Act"), the most ambitious climate legislation in the United States. The Climate Act established a Climate Action Council charged with developing a plan to reduce greenhouse gas emissions in every sector of the State's economy; and

WHEREAS, Section 7 of the Climate Act addresses climate change actions by NYS agencies, and specifically that Section 7.1 states that NYS agencies shall assess and implement strategies to reduce their greenhouse gas emissions; and

WHEREAS, Section 7.3 of the Climate Act also directs all State agencies, offices, authorities, and divisions to prioritize reductions of greenhouse gas emissions and co-pollutants in Disadvantaged Communities as identified pursuant to Subdivision 5 of Section 75-0101 of the Environmental Conservation Law ("ECL"); and

WHEREAS, the State has already committed to meet 100 percent of its Office of General Services ("OGS")-managed State agency facility electricity demand in New York City with renewable energy by 2025.

NOW, THEREFORE, I, KATHY HOCHUL, Governor of the State of New York, by virtue of the authority vested in me by the Constitution and laws of the State of New York, do hereby order as follows:

I. Definitions

A. "Affected Entities" shall mean any agency or department over which the Governor has executive authority, including all offices and divisions thereof, as well as all public authorities for which the Governor appoints the Chair, the Chief Executive, or the majority of board members,

including all offices and divisions thereof, except for the Port Authority of New York and New Jersey. This shall include the State University of New York and the City University of New York. Refer to the list presented in Exhibit A.

B. “BuildSmart 2025” shall mean the collective effort by Affected Entities to reduce site energy use by 11 trillion British Thermal Units by 2025 from a 2015 baseline.

C. “Disadvantaged Communities” shall mean communities that bear burdens of negative public health effects, environmental pollution, impacts of climate change, and possess certain socioeconomic criteria, or comprise high-concentrations of low- and moderate- income households, as identified pursuant to ECL § 75-0111.

D. “Light-duty vehicles” shall mean vehicles equal or less than 10,000 pounds gross weight.

E. “Medium- and heavy-duty vehicles” shall mean more than 10,000 pounds gross weight.

F. “New construction” shall mean the construction of a new building that is occupied during all four seasons and is 5,000 square feet or larger.

G. “Qualifying Tier” shall mean any tier of the New York State Public Service Commission’s Clean Energy Standard (Case 15-E-0302) (“CES”) that is designed to incentivize the delivery of additional, incremental clean energy to New York State or a specific location within New York State, which as of the date of this Executive Order includes Tier 1, Offshore Wind and Tier 4 but not Tier 2 or Zero-Emission Credits.

II. GreenNY Council

A. There is hereby established the GreenNY Council (the "Council"). The Council shall be comprised of the Director of the Division of the Budget (“DOB”); the Commissioner of the Office of General Services; the Commissioner of the Department of Environmental Conservation (“DEC”); the Commissioner of the Department of Health; the Commissioner of Economic Development; the Commissioner of Transportation; the Commissioner of the Office of Parks, Recreation, and Historic Preservation; the President of the Environmental Facilities Corporation; the President of the New York State Energy Research and Development Authority

("NYSERDA"); the President of the New York Power Authority ("NYPA"); the President of the Dormitory Authority of the State of New York; and the Chief Executive Officer of the Metropolitan Transportation Authority.

B. The Council shall be the primary body responsible for implementing this Order.

C. Members of the Council may designate a staff member, and an alternate, to represent them and participate on the Council on their behalf.

D. The Council shall be led and co-chaired by the Commissioner of OGS, the Commissioner of DEC, the Director of DOB, the President of NYSERDA, and the President of NYPA, or their designees. The day-to-day work of the Council shall be performed by executive and program staff of these leadership agencies and authorities, in consultation with any other agency or authority staff that participate in Council work.

E. The Office of Information Technology Services shall support the Council's performance of its responsibilities under this Order.

F. The Council shall meet as needed, but no less than quarterly, to conduct public business. A majority of the members of the Council (or their designees), shall constitute a quorum, and all actions and recommendations of the Council shall require approval by a majority of the total members of the Council.

G. The Council may form advisory subcommittees or workgroups, both standing and ad hoc, as the Council sees fit, made up of executive and program staff, to provide advice and assistance to the Council regarding matters assigned to such subcommittees or workgroups by the Council.

III. Training, Staff, and Support

A. Each Affected Entity shall, no later than 30 days from the issuance of this Order, assign an employee to serve as its Sustainability Coordinator. Sustainability Coordinators shall be given management support and provided with the necessary resources to enable the Affected Entity to comply with this Order. Sustainability Coordinators shall serve as the Affected Entity's liaison to the Council.

1. Affected Entities are encouraged to create a Sustainability Team in-house to support the work of the Council. This Sustainability Team should be comprised of appropriate staff involved in identifying, approving, and implementing sustainability or energy projects, and environmental justice matters. The Sustainability Team should include an executive sponsor at the Deputy or Associate Commissioner, or Vice President level or equivalent.

B. The Council shall design and implement training and outreach programs for Sustainability Coordinators and other Affected Entity staff that participate in Council work to assist with carrying out the requirements of this Order.

IV. Reporting

A. All Affected Entities shall furnish such information and assistance as the Council determines is reasonably necessary to accomplish its purposes. All Affected Entities shall share data in the most efficient manner identified by the Council for purposes of informing any progress reports, and the Council shall follow applicable NYS Data Governance procedures regarding any interagency data sharing or collection.

B. NYPA shall provide Affected Entities with access to the New York Energy Manager ("NYEM"), with necessary technical support, at cost. NYEM shall serve as the system of record for all energy data from covered facilities. All Affected Entities shall ensure that their energy data is entered into the NYEM system. The Council shall leverage this data to develop a GHG baseline for Affected Entity operations.

C. The Council shall develop an annual survey to gather information from Affected Entities regarding:

1. The progress each Affected Entity has made toward achieving the directives, targets and goals provided for or established pursuant to this Order;

2. The effectiveness and usage of the procurement specifications;

3. Efforts the Affected Entity has undertaken to advance environmental justice; and

4. The specific sustainability and energy efficiency projects that have been implemented and the effectiveness of such programs in meeting the targets, goals, and other requirements of this Order.

D. Affected Entities shall submit each year on or before a date as the Council may direct, a completed survey in the form and containing the information specified by the Council.

E. The Council, during the month of September in the year following the issuance of this Order, and each year thereafter, shall submit a progress report to the Governor, which shall compile the information submitted by Affected Entities pursuant to this Order and report on progress made on the implementation of this Order. Such progress report shall be published on a website established by the Council.

V. Exemptions

A. Exemptions from any of the specific targets, goals, or other requirements under this Order may be granted by the Council co-chairs, provided, however, that any exemptions to Section VII.A of this Order may only be granted by the President of NYSERDA in consultation with the Chief Executive Officer of the New York State Department of Public Service ("DPS") and Director of Budget.

B. Affected Entities may request such an exemption from Council co-chairs and must justify such request based upon the Affected Entity's particular circumstances or as set forth in this Order.

VI. Buying and Operating Green

A. The Council shall develop and issue sustainable procurement specifications (procurement specifications) for use by Affected Entities in the procurement of commodities, services, and technology, or where applicable, in the development of new public works solicitations and contracts.

Any procurement specifications developed, approved, or issued by the Interagency Committee on Sustainability and Green Procurement under Executive Order 4, issued on April 24, 2008, shall carry forward in full effect as if issued by the Council until modified by the Council.

B. In developing the procurement specifications, the Council shall consider the following factors:

1. Protection of public health and the environment, including vulnerable populations and residents in Disadvantaged Communities;

2. Avoidance of hazards from the use or release of toxic substances;

3. Pollution reduction and prevention;

4. Sustainable resource management and use, and sustainable manufacturing and production processes;

5. Low impact development and climate resilient design practices, and standards and priorities for entities providing construction, engineering, and other similar services;

6. Reduction of greenhouse gas emissions;

7. The use of renewable and zero-emission resources, remanufactured components, and reused or recycled content;

8. Waste reduction, materials reuse, recyclability, and compostability;

9. Water conservation;

10. Quality, durability and utility of the item of procurement;

11. Minimizing adverse impacts throughout a commodity's or technology's life cycle (i.e., as identified by life-cycle assessment or other supply-chain impacts);

12. Cost;

13. Extended producer responsibility; and

14. Legal and regulatory requirements applicable to the use and procurement of commodities, services, and technology, or where applicable, the procurement of public works.

C. Affected Entities shall follow the GreenNY procurement specifications approved by the Council when procuring under existing contracts or when developing new solicitations and contracts for the procurement of commodities, services, and technology, or where applicable, in the development of new public works solicitations and contracts.

D. Where an Affected Entity determines: (1) that such commodities, services, or technology set forth in an approved GreenNY procurement specification will not meet required form, function or utility; (2) the cost of the commodities, services or technology set forth in an approved GreenNY procurement specification is not competitive; or (3) there is a compelling public health or safety reason not to purchase such commodities, services or technology set forth in an approved GreenNY procurement specification, the Affected Entity may seek an exemption from the Council for its particular circumstances pursuant to Section V of this Order.

E. The Council may issue green operational directives ("Operational Directives") in a form substantially similar to its procurement specifications. In developing the Operational Directives, the Council shall consider the 13 factors set forth in Section VI.B above.

F. The Council shall provide Affected Entities with a description of projects, programs and services that can be leveraged to implement the requirements of this Order.

G. Affected Entities shall follow the Council's Operational Directives when conducting the Affected Entity's operations on real property and facilities under the Affected Entity's jurisdiction.

H. The Council shall work with the preferred sources and Minority and Woman Owned Business Enterprises and Service-Disabled Veteran Owned Businesses in order to increase awareness of the GreenNY procurement specifications.

I. The Council shall develop a baseline for sustainable purchasing by affected entities and issue targets to achieve greater compliance.

VII. Reducing Greenhouse Gas Emissions

A. By 2030 and thereafter, subject to available supply, 100% of the electricity used by Affected Entities for their own operations, except electricity needed to support the generation of electricity by an Affected Entity in accordance with its enabling authority, shall come from energy systems that are eligible under the CES ("Eligible Systems") as part of an all-of-government approach to meet the goals of the Climate Act in a cost-effective manner.

1. Each Affected Entity shall first count the amount of clean energy generated by Eligible Systems across the State that the Affected Entity pays for in its electricity bills or otherwise towards compliance with CES, based on calculations provided by NYSERDA. Affected Entities shall provide information requested by NYSERDA to perform the applicable calculations, including load data, CES compliance payments, and any other necessary information.

2. For the remainder of its electricity usage, each Affected Entity shall next be required to demonstrate meeting this obligation, where feasible, through the use of on- or off-site Eligible Systems providing energy dedicated to the Affected Entity's operations.

3. For the portion of electricity that cannot be served by such Eligible Systems, each Affected Entity shall, in consultation and agreement with NYSERDA and DPS, procure renewable energy certificates ("RECs") qualified under a Qualifying Tier of the CES.

4. NYSERDA and DPS shall establish further detailed guidelines and requirements with respect to how each Affected Entity shall comply, and report compliance, with this Section VII(A) of this Executive Order.

5. The Council will monitor progress towards this requirement, and NYSERDA and DPS will make adjustments to this obligation as needed based on statewide progress towards Climate Act mandates.

B. To the fullest extent feasible, beginning January 1, 2024, all new construction submitted for permitting by Affected Entities shall avoid infrastructure, building systems or equipment that can be used for the combustion of fossil fuels, excluding the necessary use for backup emergency generation and process loads, provided that Affected Entities shall avoid the use of backup emergency diesel generators where practicable. This shall not affect the continued operation

and maintenance of State or Affected Entity owned or operated electric generating facilities. The Council will monitor progress towards this goal.

C. Affected Entities shall achieve 11 trillion BTUs of energy savings at their facilities by 2025 as outlined in the BuildSmart 2025 program.

1. Each Affected Entity shall work with NYPA to achieve their allotted portion of the overall savings target for State operations. Affected Entities should consult the BuildSmart 2025 Program Guidelines for types of projects and programs to undertake, including master planning, O&M program development, participation in demand response and similar programs, submetering, LED lighting, and other projects that reduce energy consumption and enhance building efficiency.

2. Prior to 2025, the Council shall issue a 2030 energy savings goal based on an evaluation of progress towards the 2025 goal and the additional opportunities that remain for cost-effective energy savings. Such 2030 goal shall be aligned with the most recent version of the State's Scoping Plan developed pursuant the Climate Act.

D. The Council shall issue Operational Directives and guidance for common construction materials to reduce the amount of embodied carbon in such materials. Starting January 1, 2023, Affected Entities shall seek to reduce the embodied carbon in all new construction or construction projects consisting of adaptive reuse or significant renovations that cost greater than 50% of the cost of new construction, submitted for permitting by Affected Entities, by taking the following actions:

1. Design teams shall calculate the total embodied carbon that will result from the project, including shipping, transportation, and construction equipment requirements.

2. Bidders shall be required to submit environmental product declarations when available, that include the amount of embodied carbon in given building materials.

E. Affected Entities shall have 100% of their light-duty non-emergency vehicle fleets be Zero Emission Vehicles (ZEVs) by 2035 and 100% of their medium- and heavy-duty vehicle fleet be ZEVs by 2040.

1. All Affected Entities shall create and file a light-duty vehicle fleet decarbonization plan and a medium- and heavy-duty decarbonization plan with the Council. The Council shall provide technical assistance and guidance to agencies for the development of decarbonization plans. Such decarbonization plans shall include, at minimum, the following elements:

a. A purchasing plan that includes interim targets for how they will achieve the fleet decarbonization goals of this Order; and

b. A plan for providing staff training and engagement necessary for the successful decarbonization of their fleet.

2. Affected Entities shall file such light-duty vehicle fleet decarbonization plans with the Council within one year of the issuance of this Order and shall file such medium- and heavy-duty decarbonization plans with the Council within three years of the issuance of this Order.

3. Affected Entities shall file progress updates to their light and medium- and heavy-duty vehicle decarbonization plans every three years after the filing of their first plan.

4. Priority shall be given to purchasing battery electric vehicles and hydrogen fuel cell vehicles, and if they are not practicable for an Affected Entity's needs, then plug-in hybrid electric vehicles may be considered in limited circumstances as specifically authorized by the Council.

5. Affected Entities that operate emergency vehicles shall, at least annually, evaluate and test various ZEV technologies to determine if they can meet the use cases for these vehicles.

6. Affected Entities shall consult with OGS to develop ZEV charging infrastructure for their fleets. OGS shall provide guidance to agencies and coordinate the phased implementation of ZEV charging infrastructure.

7. Affected Entities are encouraged to maximize employee access to and promote the use of ZEV charging infrastructure employee workplace charging at State owned and maintained parking facilities.

F. Affected Entities shall evaluate the inclusion of distributed energy resources and energy storage to the maximum extent practicable. NYPA and NYSERDA shall collaborate to provide Affected Entities with needed technical assistance regarding new energy storage systems.

G. Affected Entities shall seek to utilize the DEC Value of Carbon Guidance, where appropriate, to aid in their decision making on greenhouse gas emission reductions under this Executive Order

VIII. Reducing Waste

A. The Council shall create a waste diversion plan template that Affected Entities shall use to complete their plans. All Affected Entities shall create a waste diversion plan and file such plan with the Council that outlines how they will meet the following goals:

1. A decrease in waste disposal of 10 percent every five years from a baseline of Fiscal Year 2018-19, until reaching a goal of 75 percent.

2. Waste data reported for these goals should be broken out into the following categories: recycled materials; compostable materials and other organics; material sent to landfill (including construction and demolition waste); and special waste (including hazardous waste).

3. The waste diversion plan shall incorporate at least the following elements:

a. a schedule for conducting routine waste audits of facilities and how the findings from the waste audit will be utilized in advancing waste reduction;

b. a plan for diverting organic waste from landfill to meet the diversion goals;

c. identifying all instances where single-use plastics are used and creating a plan to eliminate their use in all circumstances where doing so will not endanger employee or public health and safety; and

d. consideration of whether the affected entity should, by 2025, transition to dual-stream recycling that source separates recyclable items into subcategories of mixed paper and

commingled containers (plastic, glass, and metal), at all facilities where it is practicable and where dual-stream material recovery facilities are available, cost-effective and efficient.

4. In addition, technical assistance in compiling the plans will be provided by DEC.

5. The Council shall reassess the waste diversion goals of this Order at least every five years, and if the goals are updated by the Council, it shall require updated waste diversion plans to be submitted by Affected Entities on how each will meet the new goals.

6. Affected Entities shall file such plans with the Council within one year of the receipt of the waste diversion plan template.

B. After 90 days following the issuance of this Order, Affected Entities shall not expend State funds for the purchase of bottled water. If an Affected Entity determines that it has a need to purchase bottled water for health or safety reasons, it may request an exemption from the Council for its particular circumstances pursuant to Section V of this Order. The Council shall issue guidance on exceptions to this requirement to address public health issues and other appropriate circumstances. This Section does not apply to an Affected Entity purchasing bottled water for emergency purposes.

IX. Reducing Use of Toxic Substances.

A. Affected Entities shall evaluate and incorporate toxics use reduction strategies into their operations, to the extent practicable, to achieve pollution prevention. The Council will, at a minimum, provide agencies with information on healthy buildings, green cleaning and disinfection, integrated pest management and green procurement.

XI. Low Impact Development

A. Affected Entities shall evaluate, and to the maximum extent practicable, incorporate green infrastructure concepts to reduce all stormwater runoff and improve water quality in new construction or redevelopment projects submitted for permitting by Affected Entities regardless of disturbance threshold. These include activities such as the reconstruction of parking lots and the addition of new landscaping.

B. The Council, in collaboration with the EFC, will provide guidance on incorporating green infrastructure concepts to Affected Entities.

C. Climate Risk Incorporation

1. New infrastructure and building projects shall be designed and built to account for the climate changes that may occur over their lifespans. This includes incorporating climate projections and adaptation strategies in upfront design and expected operations and management. Preservation of open space shall be considered as a strategy for climate risk mitigation in new and existing construction.

2. The Council will provide guidance on incorporating climate projections and climate risk concepts to Affected Entities.

3. All Affected Entities shall evaluate opportunities to harden their infrastructure and mitigate the impacts of climate change with resilience practices such as nature-based solutions and modular infrastructure.

XII. Promoting Biodiversity and Habitat Protection

A. Affected Entities that have jurisdiction over real property shall, where practicable, seek opportunities to enhance the ecological integrity of their real property to support native biodiversity and the NYS Pollinator Protection Plan, protect threatened and endangered species, and increase climate resilience and natural carbon storage. This includes prioritizing the use of native plants and minimizing the use of non-native plants in landscaping and other planting efforts and other activities that may be identified in the New York Natural Heritage Program conservation guide and its management recommendations regarding listed plants.

B. The Council shall provide a template for all Affected Entities to implement an Early Detection Rapid Response protocol in place for invasive species on the real property over which the Affected Entity has jurisdiction. The Council may issue additional operational directives to stop the spread of invasive species on State-owned real property.

C. Affected entities shall give priority to the use of integrated pest management techniques to control invasive species before turning to other means of eradication.

D. All Affected Entities shall follow available best practices for identifying and properly managing endangered species on real property and ensure that their projects and operations do not have an adverse impact upon any endangered species. The DEC shall provide guidance and technical assistance to Affected Entities regarding properly managing endangered species and data tools to identify locations where endangered species issues may be present.

E. Affected Entities shall evaluate opportunities, to the extent practicable, to co-locate new projects with landscaping or habitat to support native pollinator species and the goals of the NYS Pollinator Protection Plan and enhance climate resilience and natural carbon storage.

XIII. Disadvantaged Communities

A. Each Affected Entity shall, to the maximum extent practicable, lower the impact of its operations on Disadvantaged Communities, and shall incorporate lowered environmental impact in these communities into the plans developed by Affected Entities pursuant to this Order.

B. The Council shall conduct an inventory of State-owned facilities located in Disadvantaged Communities.

C. Affected Entities shall prioritize facilities over which the Affected Entity has jurisdiction that are located within Disadvantaged Communities for efficiency and other environmental upgrades, such as electrifying heating and cooling systems, which will lower the Affected Entity's environmental impacts on these communities.

XIV. Innovative Solutions

A. The Council shall continuously evaluate the potential of new technologies in order to assist Affected Entities in continuing to reduce their environmental footprint and increase climate resilience (mitigation and adaptation) of its operations, and wherever feasible, test new technologies and equipment to determine if such technologies or equipment is practicable for adoption in Affected Entity operations.

XV. Repeal of Prior Executive Orders

A. Executive Order 4, issued on April 24, 2008, Executive Order 18, issued on May 5, 2009, Executive Order 88, issued on December 28, 2012, and Executive Order 166, issued on June 1, 2017, are hereby revoked and superseded by this Executive Order.

G I V E N under my hand and the Privy Seal of the State in the City of Albany this twentieth day of September in the year two thousand twenty-two.

BY THE GOVERNOR

Secretary to the Governor

APPENDIX B: COPY OF EXECUTIVE ORDER 22 EXHIBIT A – AFFECTED ENTITIES

EXHIBIT A – Affected Entities

1) AGING- Office for the Aging

2) AGM- Department of Agriculture and Markets

3) APA- Adirondack Park Agency

4) ARTS- Council on the Arts

5) BFSA- Buffalo Fiscal Stability Authority

6) BOE- Board of Elections

7) BPCA- Battery Park City Authority/Parks Conservancy

8) CDTA- Capital District Transportation Authority

9) CELG- Commission on Ethics and Lobbying in Government

10) CENTRO- Central New York Regional Transportation Authority

11) CIVIL- Department of Civil Service

12) CPB- Central Pines Barrens Joint Planning & Policy Commission

13) CUNY- City University of New York

14) DASNY- Dormitory Authority of New York

15) DCJS- Division of Criminal Justice Services

16) DEC- Department of Environmental Conservation

17) DED- Department of Economic Development

18) DFS- Department of Financial Services

19) DHCR- Division of Housing and Community Renewal

20) DHR- Division of Human Rights

21) DHSES- Division of Homeland Security and Emergency Services

22) DMV- Department of Motor Vehicles

23) DOB- Division of Budget

24) DOCCS- Department of Corrections and Community Supervision

25) DOH- Department of Health

26) DOS- Department of State

27) DOT- Department of Transportation

28) DPS- Department of Public Service

29) DVS- Division of Veterans Services

30) ECFSA- Erie County Fiscal Stability Authority

31) ECMC- Erie County Medical Center Corporation

32) EFC- Environmental Facilities Corporation

33) FCB- Financial Control Board

34) GAMING- Gaming Commission

35) GOER- Governor's Office of Employee Relations

36) HESC- Higher Education Services Corporation

37) HRBRRD- Hudson River- Black River Regulating District

38) HRVG- Hudson River Valley Greenway

39) IG- Office of Inspector General

40) ITS- Information Technology Services

41) JAVITS- New York Convention Center Operating Corporation

42) JC- Justice Center

43) LABOR- Department of Labor

44) LIPA- Long Island Power Authority

45) MNA- Division of Military and Naval Affairs

46) MTA- Metropolitan Transportation Authority

47) NFTA- Niagara Frontier Transportation Authority

48) NIFA- Nassau County Interim Finance Authority

49) NYPA- New York Power Authority

50) NYSBA- New York State Bridge Authority

51) NYSERDA- NYS Energy Research and Development Authority

52) NYSIF- Insurance Fund

53) OASAS - Office of Addiction Services and Supports

54) OCFS- Office of Children and Family Services

55) Office of Victim Services

56) OGDENSBURG- Ogdensburg Bridge and Port Authority

57) OGS- Office of General Services

58) OMH- Office of Mental Health

59) OPRHP- Office of Parks, Recreation, and Historic Preservation

60) OPWDD- Office of People with Developmental Disabilities

61) ORDA- Olympic Regional Development Authority

62) OTDA- Office of Temporary and Disability Assistance

63) PERB- Public Employment Relations Board

64) PORTOSWEGO- Port of Oswego Authority

65) RIOC- Roosevelt Island Operating Corporation of the State of New York

66) RTS – Rochester Genesee Regional Transportation Authority

67) SLA - Alcohol Beverage Control (State Liquor Authority)

68) SUNY- State University of New York

69) TAX- Department of Taxation & Finance

70) THRUWAY- Thruway Authority

71) TROOPERS- State Police

72) UDC- Urban Development Corporation

73) UNDC- United Nations Development Corporation

74) WCB- Workers' Compensation Board

75) WCMC- Westchester County Health Corporation

APPENDIX C: SECTION 7.1 CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT (CLCPA)

§ 7. Climate change actions by state agencies. 1. All state agencies shall assess and implement strategies to reduce their greenhouse gas emissions.

NY State Senate Bill S6599 (nysenate.gov)

Unpacking New York's Big New Climate Bill: A Primer (NRDC)

Unpacking New York's Big New Climate Bill: A Primer | NRDC

Scoping Plan: Full Report, December 2022 (NYS Climate Action Council)

Final Scoping Plan (ny.gov)

APPENDIX D: METHODOLOGY FOR DETERMINING AFFECTED ENTITY TARGETS

EO 22 requires Affected Entities to achieve 11 TBTU of site energy savings in buildings by December 31, 2025, as compared to a baseline calculated using energy consumption data from NY SFY 2014-2015. SFY 2014-2015 is defined as the period from April 1, 2014, to March 31, 2015. This Appendix D provides a methodology for measuring savings toward energy reduction targets and the process by which targets are set for each Affected Entity.

To effectively measure progress toward EO 22 reduction goals, all Affected Entities reported baseline energy use for SFY 2014-2015 and total gross square footage for all buildings with an area larger than 5,000 sqft. The PMIT created a site EUI baseline for these Covered Facilities using the fuel conversion factors in the table below. Affected Entities will submit project-level energy savings data for all Covered Facilities on a semi-annual basis through NYEM. The PMIT will compare project-level savings against an Affected Entity's energy savings target to determine progress toward individual and cumulative statewide goals. For Affected Entities that did not submit baseline data, a placeholder target was established. Contact the BuildSmart Program Manager to confirm your Affected Entity's energy savings target.

Fuel Type	Fuel to kBTU Conversion Factor[6]
Electricity (grid purchase)	3.412
Electricity (on-site generation)	3.412
Natural gas (therms)	100
Natural gas (ccf)	102.8
Fuel oil #1 (gallons)	139
Fuel oil #2 (gallons)	138
Fuel oil #4 (gallons)	146
Fuel oil #5 and #6 (gallons)	150
Propane and liquid propane (gallons)	91
Steam (thousand lbs.)	1,194
Diesel (gallons)	138
Kerosene (gallons)	135
Hot water (therms)	100
Chilled water (ton hours)	12
Wood (tons)	15,380
Coal – anthracite (tons)	25,090
Coal – bituminous (tons)	24,930
Coke (tons)	24,800

[6] All conversion factors are based on information from the Environmental Protection Agency's (EPA) ENERGY STAR program.

The basic components of the BuildSmart 2025 savings methodology are:

- Establish savings targets for each Affected Entity
- Affected Entity reports project-level energy savings in NYEM
- Track project-level energy savings to assess progress toward savings targets

ESTABLISHING SAVINGS TARGETS

The PMIT established savings targets for each Affected Entity on an individual basis. To establish a savings target for each Affected Entity, an EUI benchmarking approach was utilized. This approach established a method that fairly distributes savings across Affected Entities based on building performance in the baseline year (SFY 2014-2015). **For Affected Entities that did not submit baseline data, a placeholder target was established. Contact the BuildSmart Program Manager to confirm your Affected Entity's energy savings target.**

For the normative benchmarking approach, efficient benchmark site EUIs were compared with actual facility site EUIs. The efficient benchmark EUIs for each building type were generated using the regional and climate zone specific 2012 Commercial Building Energy Consumption Survey (CBECS) EUI distributions. For building types where EUI benchmarks were not available through CBECS, ENERGY STAR Portfolio Manager data was used to supplement the CBECS dataset.

For the small number of building types where there was not an applicable counterpart in CBECS or ENERGY STAR Portfolio Manager (e.g., idiosyncratic facilities such as MTA's Grand Central Terminal), the PMIT determined an acceptable proxy building type and/or data source for benchmarking.

ADJUSTING FOR WEATHER VARIATION

Weather can have a significant impact on energy use across all building types. If the number of heating degree days (HDD) or cooling degree days (CDD) vary from historical averages, energy use is likely to be affected. As a result, the EUI for that year may appear higher or lower than that of a typical year even though, when normalized for climatic differences, the EUI remains unchanged or even reduced as compared to prior years. Therefore, in order to establish a normalized EUI that was not impacted by weather variations, HDDs and CDDs of SFY 2014-2015 were adjusted as necessary.

As part of its ENERGY STAR Portfolio Manager benchmarking program, the EPA has performed extensive regression analyses for building types to examine how HDDs and CDDs relate to EUI. The PMIT used the coefficients found by the EPA's regression analysis to adjust the Affected Entity's observed EUI measurements for the baseline year. where possible, the PMIT performed adjustments based on individual building types. A Microsoft Excel-based tool was developed to normalize EUI measurements for weather using coefficients and data from both EPA and the National Oceanic and Atmospheric Administration (NOAA).

ADJUSTING FOR OTHER CRITERIA

There are other non-weather factors that may affect a building's ability to operate efficiently and thus make comparisons misleading. These factors may give a distorted view of a building's or

Affected Entity's true efficiency progress and subsequent savings target allocation. Further, it is likely that no matter how comprehensive a list of specific exemptions, valid yet unforeseen exemptions will arise in the future. It is therefore infeasible to produce a specific list of exemptions along with prescriptive formulae on how to adjust the savings targets based on each exemption. As situations arise, the PMIT will work with Affected Entities to address these unique situations on a case-by-case basis.

CREDITS

Credit toward energy reduction targets will be considered for Affected Entities that improve their energy efficiency in areas not covered by BuildSmart 2025, such as in buildings under 5,000 sqft or in equipment related to process load. Credits for such activities will be considered by the PMIT on a case-by-case basis and must be supported by documentation.

APPENDIX E: PROJECT PIPELINE GUIDANCE AND METHODOLOGY FOR MEASURING PROJECT SAVINGS

Affected Entities are required to keep a list of completed and planned energy saving projects in NYEM, known as their "project pipeline". The project pipeline will indicate progress toward the Affected Entity's individual savings target as well as the cumulative EO 22 goal.

The project pipeline will be populated based on activities conducted under BuildSmart 2025 and may include no- and low-cost operational improvements from O&M, RCx studies, CCx[SM], energy audit measures, capital projects, retrofits, on-site renewables, and other measures that produce energy savings. **At a minimum, Affected Entities must report on energy saving projects for Covered Facilities over 5,000 sqft**. However, Affected Entities may include projects at Covered Facilities that fall below the 5,000 sqft threshold in reporting if desired. Projects completed after January 1, 2015, and any planned project at 30% design or beyond may be counted toward an Affected Entity's savings target.

CALCULATING SAVINGS

Energy savings must accompany projects entered in NYEM as part of an Affected Entity's project pipeline. Savings should be calculated using formulas and methods in either of the documents below – savings will be tracked based on calculated savings and not measured building energy use.

- *New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs – Residential, Multi-Family, and Commercial/Industrial* (NYS Technical Resource Manual (TRM))
- *Energy Savings Calculation and Cost Analysis Handbook for New York Power Authority* (NYPA Handbook)[7]

Keep in mind that savings can sometimes be captured through operational adjustments and routine maintenance. These are eligible activities for entry into the project pipeline as well.

In some cases, projects may need to be treated as "custom measures", which the TRM describes as "unique, and often complex, technologies and processes installed in large facilities." Custom measures may not fit into discrete measure and savings calculations within the TRM or NYPA Handbook. In these cases, both the TRM and NYPA Handbook provide guidance on how to calculate savings. In general, savings calculations involve establishing a baseline, detailed engineering analysis, and energy modeling and calibration. If custom measures are included in the project pipeline, Affected Entities should have documentation available to substantiate energy savings in the case of an audit.

As a simple example, consider a residential natural gas boiler tune up. According to the TRM, the boiler tune-up includes the inspection, cleaning, and/or adjustment of boiler and appurtenances per manufacturer's recommendations. Savings (in therms) are calculated as:

$$\Delta \text{ therms} = \text{units} \times \frac{\text{kBTU/h}_{\text{in}}}{\text{unit}} \times \frac{\text{EFLH}_{\text{heating}}}{100} \times \text{ESF}$$

Where:

[7] The NYPA Handbook may be requested by emailing the BuildSmart Program Manager

Δ therms = Annual gas energy savings

units = Number of measures installed under the program, assume 1 boiler

kBTU/hin = Nameplate capacity gas input rating (kBTU/h), assume 60 kBTU/h

EFLHheating = Equivalent full-load heating hours, assume 1,012 for Albany according to TRM

ESF = Energy savings factor, 0.03 according to TRM

100 = Conversion factor, one therm equals 100 kBTU

Therefore:

$$18.2 \text{ therms} = 1\ x\ \frac{60}{1} x \frac{1{,}012}{100} x 0.03$$

In this example, the tune-up from maintenance would generate 18.2 therms of savings and these savings could be documented in the project pipeline and count toward an Affected Entity's EO 22 savings target.

REPORTING IN NYEM

EO 22 establishes NYEM as the system of record for all state energy data from Covered Facilities. Therefore, NYEM is the official record used to track progress toward Affected Entity individual savings targets and the overall 11 TBTU savings goal. Affected Entities will work with the PMIT to integrate their project pipeline into NYEM.

REQUIRED DATA

Affected Entity Name	Entity that owns and/or leases the building where the project is located
Building name and address	Name and address of the building where the project is located
Project name	Name of the project (e.g., LED lighting upgrade)
Project category	Type of project (e.g., Energy Efficiency – Lighting)
Project status	Current status of the project (e.g., identified, in progress, completed)
Project manager	Name of the individual managing the project
Start date	Actual or estimated project start date
Completion date	Actual or estimated project completion date
Energy savings	Energy savings for the project as calculated per methods outlined in this Program Guidelines. Energy savings for all fuels including electricity (kWh), natural gas (therms), fuel oil (gallons), etc.

APPENDIX F: ENERGY AUDIT GUIDANCE

For BuildSmart 2025, all required energy audits must follow ASHRAE's definition of a Level 2 energy audit as defined in ASHRAE/ACCA Standard 211-2018. Level 2 audits should be completed by a qualified energy auditor who will know all required data that is needed to be collected and procedures to be performed. To introduce Affected Entities to what is required, the table below summarizes activities and data collected during an ASHRAE Level 2 energy audit.

Procedure / Data	**Additional Information**
Site visit	The energy auditor will conduct a site visit to gather data and assess the building
Building data	General building characteristics such as area, year constructed, space functions, occupancy information, etc.
Energy data	Minimum one year of energy use data for all sources of energy in the building
Envelope data	Data on envelope characteristics such as construction, insulation, and general condition. This will include data for roofs, floors, walls, fenestration, and foundation
HVAC data	Data on HVAC equipment and zones in the building. This will include data on controls, outdoor air intakes, heat recovery, exhaust fans, distribution systems, and sources for cooling, heating, and DHW
Equipment inventory	A general inventory of all equipment in the building including type, location, efficiency, capacity, age, and condition
Lighting and plug loads	Data on lighting equipment and controls, as well as major plug loads like computers and freezers
End-use energy breakdown	The energy auditor will estimate energy consumption for each end-use such as heating, cooling, DHW, lighting, etc.
Identify energy efficiency measures	The energy auditor will identify and recommend both low- and no-cost measures as well as capital projects based on the site visit and data collected. Measures will include estimated costs, savings, and cost-effectiveness
Presentation of results	At the conclusion of the energy audit, the energy auditor will present results to the building owners and other relevant staff and recommend next steps

APPENDIX G: METHODOLOGY FOR DETERMINING PROJECT COST-EFFECTIVENESS

For BuildSmart 2025, a project is considered cost-effective if the calculated simple payback is 10 years or less, or it has a 7% or greater internal rate of return (IRR). When evaluating multiple mutually exclusive alternatives, the alternative with the highest IRR is considered the most cost-effective and should be selected for installation.[8]

The following overview and examples of the calculation of simple payback and IRR illustrate the general process. However, real-world analyses can become far more complicated as component replacement costs, energy price escalation, planning/construction periods, and multiple fuels and multiple alternatives with different efficiency levels are considered. Because of this, in practice, cost-effectiveness is rarely calculated by hand. Several computer software applications, like the Federal Energy Management Program's Building Life-Cycle Cost Program, are available at no cost and greatly reduce the burden of determining cost-effectiveness. In addition, NYEM can calculate project IRR when the appropriate data is input into the platform. Contact the BuildSmart Program Manager for more information.

For BuildSmart 2025, calculations of simple payback and IRR should reflect:

- Incremental equipment costs when replacing at end of life
- Full equipment costs for early replacement
- Incremental energy savings over baseline equipment
- Any maintenance savings
- Effective Useful Life from NYS TRM as needed

SIMPLE PAYBACK OVERVIEW

Simple payback is the length of time needed to pay back the initial capital investment and is a projection of the revenue stream, cost savings, and other factors estimated and compared to the initial capital outlay. This simple technique ignores the cost of borrowing money (interest), lost opportunity costs, inflation, and the time value of money. Simple payback provides an easy assessment of a project's cost-effectiveness.

Simple payback typically requires the following general project information:

- Initial capital project cost
- Annual energy cost savings
- Any change in annual maintenance costs

A general formula for simple payback is as follows:

$$\text{SPP} = \frac{\text{Initial Capital Cost}}{\text{Annual Cost Savings}}$$

Where:

SPP = Simple payback period in years

[8] There may be cases where non-monetary considerations justify pursuing an alternative other than the option with the highest IRR. In general, however, the highest IRR alternative should be pursued.

Initial Capital Cost = Total initial costs (e.g., equipment and installation costs)

Annual Cost Savings = Total annual cost savings (e.g., energy savings, maintenance savings)

INTERNAL RATE OF RETURN (IRR) OVERVIEW

Internal rate of return (IRR) is a metric that calculates annual yield of a project and can indicate if that project will be beneficial if the IRR is greater than a specified rate – 7% for BuildSmart 2025. The IRR method calculates a return on investment over the defined analysis period. The annual savings and costs are not discounted, and a cash flow is established for each year of the analysis period, to be used with an initial cost (or value of the loan). Annual recurring and special (non-annual) savings and costs can be used. The cash flow is then discounted until a calculated discount rate is found that yields a net present value of zero. This method assumes savings are reinvested at the same calculated rate of return. Therefore, the calculated rates of return can be overstated compared to the actual rates of return. Nevertheless, IRR is useful when comparing cost-effectiveness of multiple options.

The general formula for IRR is as follows:

$$0 = \sum_{t=1}^{n} \frac{CF_t}{(1 + IRR)^t} - CF_0$$

where:

CF = Net cash flow. Sum of all relevant costs, including initial and future costs, less any positive cash flows (e.g., savings)

CFt = Net cash flow occurring in year t

CF0 = Total initial capital costs (e.g., equipment and installation costs)

t = Year of occurrence (where 0 is base date, and 1 is first year with savings)

n = Number of years in the study period

COST-EFFECTIVENESS ANALYSIS EXAMPLES

EXAMPLE 1 – Required Equipment Replacement

Consider a hypothetical HVAC replacement project. A facility's existing space-cooling system is past its effective useful life and is in imminent need of replacement. An energy audit identifies two options for replacement: a base case (BC) system consisting of a minimally Energy Conservation Construction Code of NYS-compliant water-cooled, electrically operated, centrifugal chiller *without* night-time setback and economizer cycle, and an efficient alternative (A) system consisting of a high-efficiency, VFD-equipped water-cooled, electrically operated, centrifugal chiller *with* night-time setback and economizer cycle.[9]

	Base Case (BC)	**Alternative (A)**
Initial investment costs	$150,000	$195,000

[9] While this example only considers two alternatives, a more robust energy audit will typically identify several mutually exclusive alternatives

Annual electricity costs	$83,160 (594,000 at $0.14/kWh)	$72,800 (520,000 at $0.14/kWh)
Annual OM&R costs	$8,000	$9,000
Total annual costs	$91,160	$81,800

The simple payback of Alternative A can be calculated with the equation below. The equipment is being replaced at the end of life, so incremental costs over the BC should be used for the initial capital cost. Additionally, the annual cost savings should account for the reduced electricity costs and the increased OM&R costs, so the total annual costs in the table above should be used for annual cost savings.

To determine whether the alternative would be required by BuildSmart 2025, the simple payback is calculated as follows:

$$\text{Intial Capital Cost} = \$195{,}000 - \$150{,}000 = \$45{,}000$$

$$\text{Annual Cost Savings} = \$91{,}160 - \$81{,}800 = \$9{,}360$$

$$\text{SPP} = \frac{\$45{,}000}{\$9{,}360} = 4.8 \text{ years}$$

It is determined that the alternative has a simple payback of 4.8 years, therefore Alternative A would be considered a Required Capital Project because the simple payback is less that the 10-year BuildSmart 2025 threshold.

EXAMPLE 2 – Early Equipment Retirement

Consider a hypothetical boiler replacement project. A facility's existing boiler system is still operational and currently meets the functional requirements of the facility. However, the boiler is nearing the end of its effective useful life and requires considerable annual maintenance to remain operational.

An energy audit identifies three options. First, the base case (BC) represents a "do-nothing" option where the existing boiler will continue to be maintained. However, since the equipment's life is finite, a new boiler will be required in 5 years. In 5 years, a minimally Energy Conservation Construction Code of NYS-compliant gas-fired, hot water boiler *without* a modulating burner would be installed. Second, Alterative 1 (A1) would immediately install a minimally Energy Conservation Construction Code of NYS-compliant gas-fired, hot water boiler *without* a modulating burner. Finally, Alternative 2 (A2) would immediately install a high-efficiency, gas-fired, hot water boiler *with* a modulating burner.

	Base case (BC)	**Alternative 1 (A1)**	**Alternative 2 (A2)**
Initial investment costs	$0	$130,000	$149,500
Replacement costs in year 5	$130,000	$0	$0
Residual value	$15,000	$5,000	$54,000
Annual natural gas costs (year 1-5)	$67,500 (7,500 MMBTU at $9.00/MMBTU)	$63,000 (7,000 MMBTU at $9.00/MMBTU)	$55,800 (6,200 MMBTU at $9.00/MMBTU)

	Base case (BC)	Alternative 1 (A1)	Alternative 2 (A2)
Annual natural gas costs (year 6-20)	$63,000 (7,000 MMBTU at $9.00/MMBTU)	$63,000 (7,000 MMBTU at $9.00/MMBTU)	$55,800 (6,200 MMBTU at $9.00/MMBTU)
Annual OM&R costs (year 1-5)	$1,500	$6,500	$7,500
Annual OM&R costs (year 6-20)	$6,500	$6,500	$7,500

The two alternatives can be evaluated against the BC by calculating a cash flow for each year of the study period. Example equations are below for the select time periods. All years should include natural gas and OM&R costs. Year 5 should account for the $130,000 replacement cost in the BC that does not occur in the alternatives. Finally, the residual value should be included in the cash flow for year 20.

Alternative A1 example cash flow:

$$\mathrm{CF}_{\mathrm{A1,t=1\ to\ 4}} = (\$67{,}500 + \$1{,}500) - (\$63{,}000 + \$6{,}500) = -\$500$$

$$\mathrm{CF}_{\mathrm{A1,t=5}} = (\$67{,}500 + \$1{,}500 + \$130{,}000) - (\$63{,}000 + \$6{,}500) = \$129{,}500$$

$$\mathrm{CF}_{\mathrm{A1,t=6\ to\ 19}} = (\$63{,}000 + \$6{,}500) - (\$63{,}000 + \$6{,}500) = \$0$$

$$\mathrm{CF}_{\mathrm{A1,t=20}} = (\$63{,}000 + \$6{,}500 - \$15{,}000) - (\$63{,}000 + \$6{,}500 - \$5{,}000) = -\$10{,}000$$

Alternative A2 example cash flow:

$$\mathrm{CF}_{\mathrm{A2,t=1\ to\ 4}} = (\$67{,}500 + \$1{,}500) - (\$55{,}800 + \$7{,}500) = \$5{,}700$$

$$\mathrm{CF}_{\mathrm{A2,t=5}} = (\$67{,}500 + \$1{,}500 + \$130{,}000) - (\$55{,}800 + \$7{,}500) = \$135{,}700$$

$$\mathrm{CF}_{\mathrm{A2,t=6\ to\ 19}} = (\$63{,}000 + \$6{,}500) - (\$55{,}800 + \$7{,}500) = \$6{,}200$$

$$\mathrm{CF}_{\mathrm{A2,t=20}} = (\$63{,}000 + \$6{,}500 - \$15{,}000) - (\$55{,}800 + \$7{,}500 - \$5{,}400) = -\$3{,}400$$

Finally, IRR is solved for using the equation below for the cash flow for each year of the select period for both A1 and A2. Because of the complexity, IRR is rarely solved by hand and computer software applications can aid in calculations.

Alternative 1:

$$0 = \sum_{\mathrm{t=1}}^{\mathrm{n}} \frac{\mathrm{CF_t}}{(1+\mathrm{IRR})^{\mathrm{t}}} - \mathrm{CF_0} = \frac{-\$500}{(1+IRR_{A1})^1} + \cdots + \frac{-\$10{,}000}{(1+IRR_{A1})^{20}} - \$130{,}000$$

$$\mathrm{IRR_{A1}} = -2.9\%$$

Alternative 2:

$$0 = \sum_{\mathrm{t=1}}^{\mathrm{n}} \frac{\mathrm{CF_t}}{(1+\mathrm{IRR})^{\mathrm{t}}} - \mathrm{CF_0} = \frac{\$5{,}700}{(1+IRR_{A2})^1} + \cdots + \frac{-\$3{,}400}{(1+IRR_{A2})^{20}} - \$149{,}000$$

$$\mathrm{IRR_{A2}} = 7.5\%$$

This analysis determined that A1 has an IRR of -2.9%, meaning it has a negative rate of return (i.e., a loss). A2 has a greater IRR of 7.5%, meaning it is the preferred alternative and exceeds the BuildSmart 2025 requirement of 7% for cost-effectiveness. Therefore, A2 would be considered a Required Capital Project.

SOCIAL COST OF CARBON

In addition to a traditional economic calculation, cost-effectiveness should be calculated separately to include the social cost of carbon from emissions reduced as additional savings. Cost-effectiveness inclusive of the social cost of carbon emissions is additional information for Affected Entities to consider but is not used to determine Required Capital Projects.

As directed by the 2019 New York Climate Leadership and Community Protection Act (CLCPA), the NYS DEC has developed a value of carbon ($/ton of CO2e) for use by NY state entities. Guidelines for State Agencies are available here.

APPENDIX H: EXEMPTION REQUESTS

An Affected Entity or Covered Facility may be exempt from certain BuildSmart 2025 requirements at the discretion of the PMIT and on a case-by-case basis. **All requests for exemptions must be submitted by email to the BuildSmart Program Manager by an Affected Entity for review and approval**, along with any backup documentation substantiating the exemption claim.

For example, exemptions may be considered due to limited savings opportunities or significant technical barriers such as in historic buildings, limited usage (e.g., seasonal space), or very low energy use (e.g., unconditioned storage space). Additional examples of qualifying exemptions are included through the Program Guidelines.

Most exemptions made will be provisional, and the Affected Entity is expected to notify the BuildSmart Program Manager of any changes to circumstances that would impact an approved exemption. For example, a temporary exemption may be issued if an Affected Entity plans to sell a property or move to a new location in the near future.

The table below outlines the information that should be provided as part of any exemption request.

Affected Entity Name	Affected Entity that owns or leases the building for which an exemption is being requested
Building name	Name of the building for which an exemption is being requested
Building address	Address of the building for which an exemption is being requested
Building floor area	Sqft of the building for which an exemption is being requested
BuildSmart 2025 requirement	Specific requirement for which an exemption is being requested, using chapter names and sections from these Program Guidelines. If there are multiple exemptions being requested, list them all
Justification for exemption	Justification for why the requirement cannot be met. Provide as much information as possible and supporting documentation as needed. Justifications should provide clear rationale as to why the BuildSmart 2025 requirement is not possible or reasonable in the building specified.

APPENDIX I: ACRONYMS

ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BTU	British thermal unit
CLCPA	Climate Leadership and Community Protection Act
CCx[SM]	Continuous Commissioning[SM]
CO2e	Carbon dioxide equivalent
Cx	Commissioning
CMMS	Computerized Maintenance Management System
DEC	New York State Department of Environmental Conservation
DER	Distributed energy resources
DHW	Domestic hot water
DOB	New York State Division of the Budget
EO	Executive Order
EUI	Energy use intensity
GHG	Greenhouse gas
HVAC	Heating, ventilation, and air-conditioning
IRR	Internal rate of return
kBTU	thousand British thermal unit
kWh	kilowatt hours
LED	Light-emitting diode
MMBTU	Million British thermal unit
M&V	Measurement and verification
MW	Megawatts
MWh	Megawatt hours
NYEM	New York Energy Manager
NYPA	New York Power Authority
NYSERDA	New York State Energy Research and Development Authority
O&M	Operations and maintenance
OM&R	Operation, maintenance, and repair
OGS	New York State Office of General Services

PMIT	NYPA's BuildSmart Program Management & Implementation Team
RCx	Retro-commissioning
TBTU	Trillion BTU
TRM	New York State Technical Resource Manual

APPENDIX J: GLOSSARY

Affected Entity: According to EO 22 - Any agency or department over which the Governor has executive authority, including all offices and divisions thereof, as well as all public authorities for which the Governor appoints the Chair, the Chief Executive, or the majority of board members, including all offices and divisions thereof, except for the Port Authority of New York and New Jersey. This shall include the State University of New York and the City University of New York. A full list of EO 22 Affected Entities is available in Appendix B.

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE): A building technology trade society focused on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability.

Benchmarking: The process of capturing a building's current energy performance and comparing it with its baseline energy performance, or the energy performance of similar buildings (such as comparing the energy performance of a hospital to that other hospitals). Benchmarking is used to compare a building's energy performance over time and assess performance amongst similar buildings.

British thermal unit (BTU): The quantity of heat required to raise the temperature of one pound of liquid water by one-degree Fahrenheit at the temperature at which water has its greatest density. All forms of energy used in buildings (electricity, natural gas, heating oil, steam, etc.) can be translated into BTU. BTU measurements are often expressed by the thousand (kBTU), million (MMBTU), or the trillion (TBTU).

Continuous Commissioning^{SM} (CCx^{SM}): An ongoing process to resolve operating problems, improve comfort, optimize energy use, and identify retrofits for existing commercial and institutional buildings and central plant facilities. CCx^{SM} focuses on improving overall system control and operations for the building, as it is currently utilized, and on meeting existing facility needs. It goes beyond an operations and maintenance program. It does not ensure that the systems function as originally designed, but rather ensures that the building and systems operate optimally to meet the current requirements.

Covered Facility: For the purposes of BuildSmart 2025, a Covered Facility is defined as any space occupied by an Affected Entity that receives any fuel. Owned, managed, and leased space is included in this definition. This includes both conditioned spaces and unconditioned spaces (e.g., warehouses, barns, garages, etc.). Affected Entities must report on monthly energy consumption and energy saving projects for any Covered Facility over 5,000 sqft. Affected Entities may include Covered Facilities that fall below the 5,000 sqft threshold in reporting if desired.

Energy Audit: An engineering study that quantifies how energy is used in a building and identifies opportunities to improve the building's energy efficiency and reduce utility expenses.

Energy Use Intensity (EUI): EUI measures the energy consumed by a building compared as a function of the building's size. EUI is commonly measured in thousands of BTU (kBTU) per gross square foot of building area.

Energy Baseline: An initial period of metered energy consumption used as a point of reference for comparison purposes. The BuildSmart 2025 Energy Baseline year is State Fiscal Year 2014-

2015. Energy reduction targets will be set for the Affected Entity based on their energy use for the baseline year.

ENERGY STAR Portfolio Manager: A web-based measurement and benchmarking tool that enables users to track building energy use and compare energy efficiency performance to similar buildings.

Gross Floor Area: The total square footage of building space as measured from the principal exterior surfaces of the enclosing fixed walls. It should include main activity space, entrance ways, stairways, elevators, hallways, occupant kitchens, storage area, and any other common spaces the building.

Internal Rate of Return (IRR): A metric that calculates annual yield of a project. A project is considered beneficial if the calculated IRR is greater than a specified rate (7% for BuildSmart 2025).

Leadership in Energy and Environmental Design (LEED): A green building rating system that is trademarked and administered by the United States Green Building Council (USGBC).

Master-Metered Campus: A group of buildings served by the same utility meter, sometimes utilizing a central cooling and heating plant.

New York Energy Manager (NYEM): An energy management platform designed and operated by the New York Power Authority. EO 22 established NYEM as the system of record for all Affected Entity energy data from Covered Facilities.

Retro-commissioning (RCx): The process of assessing, analyzing, and adjusting the operational parameters of systems in an existing building to optimize the system's performance and satisfy current operational needs.

Simple Payback: The length of time needed to pay back the initial capital investment and is a projection of the revenue stream, cost savings, and other factors is estimated and compared to the initial capital outlay.

Site Energy: The amount of heat and electricity consumed by a building as commonly reflected in utility bills.

Source Energy: Represents the total amount of fuel consumed in the generation and use of energy consumed at a building, such as electricity and natural gas. It incorporates generation, transmission, and storage losses, thereby enabling a complete assessment of energy use in a building.

State Fiscal Year (SFY): The reporting period beginning on April 1 and ending on March 31 of the following year. Affected Entities are expected to report energy usage on the New York State Fiscal Year period unless otherwise specified.

Submetered Building: A building in a master-metered campus that has had additional metering installed so that the energy use within that specific building can be determined.