



EDUCATION BRIEF MARCH 2020

WHAT'S NEW IN THE 2020 ENERGY CODE?

NYC's forward-thinking energy code is a critical building block for a low-carbon future.

New York City can only reach its ambitious carbon emissions reduction goals by making buildings significantly more energy efficient. The energy code regulates building design and construction to do just that. Every three or so years, NYC adopts a more stringent code that requires new and renovated buildings to perform better.

The new version of the New York City Energy Conservation Code (NYCECC) goes into effect on May 12, 2020 and is one of the strictest in the nation.¹ In a city where over 50,000 buildings are constructed or renovated each year, the 2020 NYCECC will likely deliver the largest carbon savings of any energy code in the country.²

The 2020 NYCECC is also making headlines because it is the first code in the state to include provisions from the NYStretch Energy Code. NYSERDA developed NYStretch as a ready-made option that is more stringent than the underlying state code. NY State jurisdictions beyond New York City can voluntarily adopt it to meet their climate goals.

WHAT IS THE ENERGY CODE?

The energy code regulates building systems that most impact energy use: the envelope, heating and cooling, hot water, lighting and power. The code specifies requirements for each system to ensure a baseline of efficiency is built in, but complying with its numerous prescriptive requirements can be complex and restrictive. Because of this, future energy codes will focus less on checklists of requirements and instead on the buildings' total energy performance.

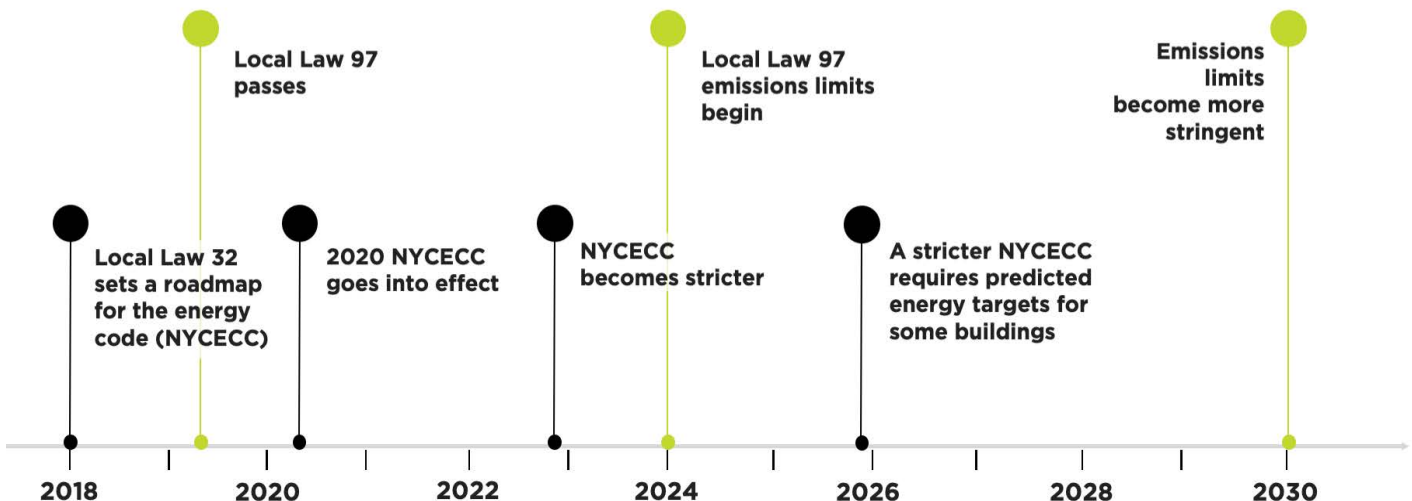
NYC's energy code is 44% more stringent than a decade ago.

AN ENERGY CODE ROADMAP

New York City's **Local Law 32 of 2018** sets a course for the energy code that will make it both stricter and simpler.³ The law requires NYStretch-level stringency for two code cycles and a shift to a predicted energy use target in the third. By 2025, buildings larger than 25,000 square feet will need to comply in a new way: instead of a checklist of prescriptive requirements, the code will specify the maximum amount of energy a building is expected to use. This framework begins to streamline the code and offers greater flexibility for designers, but will require energy modeling to demonstrate compliance and a holistic understanding of building systems to get there.

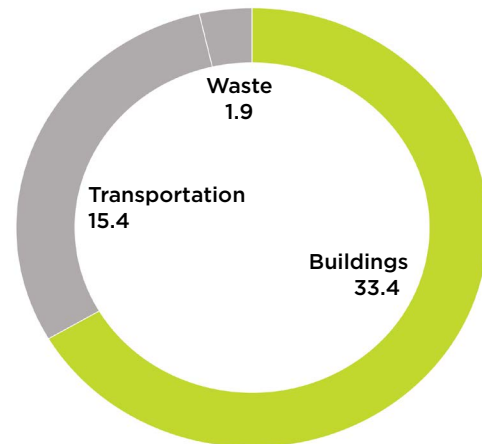
NYC Moves Towards Whole Building Performance

An evolving energy code, in addition to Local Law 97, reflects a shift towards whole building performance standards. With major milestones quickly approaching, the industry will have to consider both regulations from now on when designing and retrofiting buildings.



Citywide Carbon Emissions Sources

Buildings play a key role in NYC's carbon landscape since they are responsible for two-thirds of NYC's annual emissions.



**Millions of metric tons of CO₂e by source*

SOURCE: NYC GREENHOUSE GAS INVENTORY 2017

THE CODE AND THE CARBON CAP

In 2019, New York City adopted **Local Law 97**, which sets carbon emissions caps for buildings larger than 25,000 square feet beginning in 2024 and ramping up in 2030.⁴ Since the building systems regulated by the energy code greatly impact buildings' carbon emissions, complying with the 2020 NYCECC is an important factor in meeting the cap. While compliance with the energy code does not guarantee compliance with the carbon caps, its adoption pushes NYC's building performance in the right direction.

The 2020 NYCECC has many important changes that will drive energy savings. Notable new provisions to the **commercial** (●) and **residential** (●) codes include:

TIGHTER ENVELOPES

The envelope is the biggest driver of performance because it lasts the longest and influences the size of the HVAC system, which typically consumes the most energy. The new code tightens building envelopes to keep conditioned air from leaking out and wasting energy through:

- A new Envelope Performance Index for energy models, which acts as a backstop to limit how much designers can compensate for a poor envelope with more efficient systems.
- Increasing thermal performance of walls, roofs, and windows.
- Requiring insulation at thermal bridges at balconies, floor slabs, fenestration transitions, parapets and shelf angles.
- Distinguishing between curtain walls and punched windows to better regulate the unique characteristics of each.
- Requiring that all thermal bridges are identified and documented to reduce the transfer of heat across conductive materials.
- Requiring insulation below the entirety of heated slabs to reduce heat loss.

LIGHTING AND POWER SYSTEMS

To reduce the amount of electrical energy used in buildings, the code:

- Reduces the lighting power allowance to meet LED-level performance.
- Requires lighting controls in more commercial spaces.
- Requires regenerative drives for tall elevators to capture braking energy.
- Requires more efficient lighting equipment so that 90 percent (up from 75 percent) of permanent light fixtures meet higher efficiency requirements.
- Increases the availability of electric vehicle charging stations by requiring at least two parking spaces in many garages.
- Removes solar-ready provisions from the code as they are superseded by NYC's new sustainable roof laws.

HEATING, COOLING & HOT WATER SYSTEMS

Citywide, these systems are responsible for the majority of building energy use and emissions. The new code:

- Requires that HVAC controls are “configured to” a specific function, not just “capable of” that function as in previous codes.
- Requires whole building energy monitoring to measure and record energy use from all fuels on an hourly basis.
- Clarifies requirements for economizers (mechanical devices that draw in outdoor air for cooling to reduce energy use) and offers greater flexibility for compliance.
- Moves all ducts to conditioned spaces.
- Requires that hot water infrastructure be more efficient and better insulated.

TESTING FOR QUALITY ASSURANCE

The new code ramps up testing to ensure systems are working as intended:

- Requires air leakage testing in more buildings by lowering the threshold from 25,000 to 10,000 square feet.
- [RES + COM] Allows blower door testing in multifamily buildings to be done in sample sets of multiple units. This can reduce the total required testing if the sample set complies.

LEARN MORE

Urban Green Council offers essential training on how to understand and comply with the energy code. Visit urbangreencouncil.org/energy-code to register for a course today!

What's New in the 2020 NYC Energy Code

Learn about NYCECC's new provisions in this 90-minute course available to your firm, free of charge, for groups of 15 or more.




Crushing the New York City Code

This full-day course (7 CEUs!) is a deep dive into the energy code; learn how it works in greater detail and the new requirements in the 2020 NYCECC. Commercial and Residential courses available.

Urban Green Council transforms buildings for a sustainable future in New York City and around the world.

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THANKS

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This summary is for informational purposes only. For details and questions related to compliance, please contact the NYC Department of Buildings.

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NOTES

1. The 2020 NYCECC is adopted from the 2020 New York State Energy Conservation Construction Code (NYSECCC) which is based on the 2018 International Energy Conservation Code (IECC) and the 2016 ASHRAE 90.1 standard, including provisions from NYStretch and other NYC-specific provisions.
2. Figure from *The Green Police: Enforcing NYC's Building Laws*. Gina Bocra, Emily Hoffman and Holly Savoia, Presented at GreenBuild 2014.
3. More information on Local Law 32 is available at urbangreencouncil.org/LocalLaw32.
4. More information on Local Law 97 is available at urbangreencouncil.org/LocalLaw97.