2025 Energy Conservation Construction Code of New York State

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PREFACE

ABOUT THE NYS-CODES

In 1978, the State Legislature added Article 11 to the Energy Law to provide for a comprehensive energy conservation construction code applicable to all public and private buildings in New York State (including buildings located in the City of New York). Article 11, consisting of sections 11-101 through 11-110 of the Energy Law, sets forth the process by which the State Energy Conservation Construction Code ("Energy Code") is to be developed, maintained, administered, and enforced for the conservation of energy in buildings in New York State. Both State government and local governments are participants in this process.

In 1981, the New York State Legislature enacted legislation directing the development and implementation of an integrated, State-wide building and fire code. Prior to the adoption of this legislation, the decision as to whether to adopt and enforce a building and/or fire prevention code was left to the discretion of local governments in New York State. Many municipalities, primarily in the more developed and densely populated areas of the State, had adopted building and/or fire prevention codes. However, there were also many communities, mostly rural in nature, where no building or fire prevention code was in effect.

In light of the perils posed by fire and inadequate building construction, the State Legislature adopted a new Article 18 of the Executive Law to provide for an integrated and comprehensive building and fire prevention code. Article 18, consisting of sections 370 through 383 of the Executive Law, sets forth the process by which the code is to be developed, maintained, administered, and enforced for the protection of all New Yorkers. Both State government and local governments are participants in this process. The code, called the New York State Uniform Fire Prevention and Building Code ("Uniform Code"), took effect January 1, 1984 and prescribed minimum standards for both fire prevention and building construction. It is applicable in every municipality of the State except the City of New York, which was permitted to retain its own code.

Although the Uniform Code took effect in 1984, its antecedents are much older. Beginning in the late 1940's, New York State began developing a code known as the State Building Construction Code, which provided standards for the construction of buildings and the installation of equipment therein. Developing and maintaining the State Building Construction Code eventually became the responsibility of the New York State Division of Housing and Community Renewal (DHCR). In the 1960's, DHCR began developing a second code, the State Building Conservation and Fire Prevention Code, to address fire safety practices in buildings. Both of these codes were applicable in a municipality only when affirmatively adopted by the governing body. The State Building Construction Code and the State Building Conservation and Fire Prevention Code were repealed effective January 1, 1984 when they were replaced by the Uniform Code.

Code Development Process

Responsibility for developing and maintaining the Uniform Code and the Energy Code is vested in the State Fire Prevention and Building Code Council (the "Code Council"), chaired by the Secretary of State and composed of the Secretary of State, the State Fire Administrator, and other members appointed by the Governor (seven with consent of the Senate). The Code Council is required to meet at least quarterly but additional meetings may be called by the chair or by petition of five members of the Code Council.

Periodically both the Uniform Code and the Energy Code require amendment. The Uniform Code and the Energy Code are implemented via regulations, and any amendment of either code must be adopted pursuant to the rule making process set forth in the State Administrative Procedure Act ("SAPA"). In most situations, that process includes publishing a notice of proposed rule making in the New York State Register, specifying a period during which the public may submit comments on the proposed amendment, which unless a different time-frame is specified in statute, shall be at least sixty days, holding at least one hearing at which the public may present testimony regarding the proposed amendment, reviewing and assessing the comments and testimony received, and publishing a notice of adoption in the New York State Register. Generally, any amendment of the Uniform Code will become effective 90 days after publication of the notice of adoption; however, the Code Council has the authority to designate an earlier effective date if necessary to protect health, safety and security. An amendment of the Energy Code can be effective as early as the date of publication of the notice of adoption. However, when both the Uniform Code and Energy Code are amended at the same time, the effective dates are typically coordinated with each other. In addition, either code can be amended by adoption of an emergency rule, which can be effective as early as the date of filing of the notice of emergency adoption. New York's emergency rule making process allows an agency to adopt a rule on a temporary basis for a maximum of ninety days, at which time the emergency may be re-adopted, but each such re-adoption will be effective for a maximum of sixty days and to file for re-adoption the agency must also take action to initiate the proposal process to formally adopt the rule on a permanent basis. All rulemaking activity is published on the website of the Division of Building Standards and Codes.

Coordination of the NYS-Codes

The coordination of technical provisions allows the NYS-Codes to be used as a complete set of complementary documents. Some technical provisions that are relevant to more than one subject area are duplicated in multiple New York State Codes.

ARRANGEMENT AND FORMAT OF THE 2025 ECCCNYS

The ECCCNYS contains two separate sets of provisions—one for commercial buildings and one for residential buildings. Each set of provisions is applied separately to buildings within their scope. The ECCCNYS—Commercial Provisions apply to all buildings except for residential buildings three stories or less in height. The ECCCNYS—Residential Provisions apply to detached one- and two-family dwellings and multiple single-family dwellings as well as Group R-2, R-3 and R-4 buildings three stories or less in height. These scopes are based on the definitions of "Commercial building" and "Residential building," respectively, in Chapter 2 of each set of provisions. Note that the ECCCNYS—Commercial Provisions therefore contain provisions for residential buildings four stories or greater in height.

The following table shows how the ECCCNYS is divided. The chapter synopses detail the scope and intent of the provisions of the IECC.

CHAPTER TOPICS

Chapter	Subjects
1 and 2	Administration and definitions
3	Climate zones and general materials requirements
4	Energy efficiency requirements
5	Existing buildings
6	Referenced standards
Appendices CA/RA	Reserved
Appendices CB/RB	Solar-ready zone
Appendices CC/RC	Zero energy building provisions
Appendix CD	The 2030 glide path
Appendix CE	Required HVAC total system performance ratio (TSPR)
Appendix CF	Energy credits
Appendices CG/RE	Electric vehicle charging infrastructure
Appendices CH/RK	Electric-ready building provisions
Appendices CI/RJ	Demand responsive controls
Appendices CJ/RD	Electric energy storage provisions
Appendix RF	Alternative building thermal envelope insulation *R*-value options
Appendix RG	2024 IECC stretch code
Appendix RH	Operational carbon rating and energy reporting
Appendix RI	On-site renewable energy
Appendix RL	Renewable energy infrastructure

Chapter 1 Scope and Administration.

Chapters 1 [CE] and 1 [RE] establish the limits of applicability of the code and describe how the code is to be applied and enforced. The provisions of Chapter 1 establish the authority and duties of the building official appointed by the authority having jurisdiction and also establish the rights and privileges of the design professional, contractor and property owner.

Chapter 2 Definitions.

Chapters 2 [CE] and 2 [RE] are the repository of the definitions of terms used in the body of the code. The user of the code should be familiar with and consult these chapters because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

Chapter 3 General Requirements.

Chapters 3 [CE] and 3 [RE] specify the climate zones that will serve to establish the exterior design conditions. In addition, Chapter 3 provides interior design conditions that are used as a basis for assumptions in heating and cooling load calculations, and provides basic material requirements for insulation materials and fenestration materials. Climate has a major impact on the energy use of most buildings. The code establishes many requirements such as wall and roof insulation *R*-values, window and door thermal transmittance (*U*-factors) and provisions that affect the mechanical systems based on the climate where the building is located. This

chapter contains information that will be used to properly assign the building location into the correct climate zone and is used as the basis for establishing or eliminating requirements.

Chapter 4 Energy Efficiency.

Chapter 4 [CE] contains the energy-efficiency-related requirements for the design and construction of most types of commercial buildings and residential buildings greater than three stories in height above grade. This chapter defines requirements for the portions of the building and building systems that impact energy use in new commercial construction and new residential construction greater than three stories in height, and promotes the effective use of energy. In addition to energy conservation requirements for the building envelope, this chapter contains requirements that impact energy efficiency for the HVAC systems, the electrical systems and the plumbing systems. It should be noted, however, that requirements are contained in other codes that have an impact on energy conservation. For instance, requirements for water flow rates are regulated by the *Plumbing Code of New York State*.

Chapter 4 [RE] contains the energy-efficiency-related requirements for the design and construction of residential buildings regulated under this code. It should be noted that the definition of a residential building in this code is unique for this code. In this code, residential buildings include detached one- and two-family dwellings and multiple single-family dwellings as well as R-2, R-3 or R-4 buildings three stories or less in height. All other buildings, including residential buildings greater than three stories in height, are regulated by the energy conservation requirements in the ECCCNYS—Commercial Provisions. The applicable portions of a residential building must comply with the provisions within this chapter for energy efficiency. This chapter defines requirements for the portions of the building and building systems that impact energy use in new residential construction and promotes the effective use of energy. The provisions within the chapter promote energy efficiency in the building envelope, the heating and cooling system and the service water-heating system of the building.

Chapter 5 Existing Buildings.

Chapters 5 [CE] and 5 [RE] contain the technical energy efficiency requirements for existing buildings. Chapter 5 provisions address the maintenance of buildings in compliance with the code as well as how additions, alterations, repairs and changes of occupancy need to be addressed from the standpoint of energy efficiency. Specific provisions are provided for historic buildings.

Chapter 6 Referenced Standards.

Chapters 6 [CE] and 6 [RE] list all of the product and installation standards and codes that are referenced throughout Chapters 1 through 5 and include identification of the promulgators and the section numbers in which the standards and codes are referenced. As stated in Sections C102.5 and R102.5, these standards and codes become an enforceable part of the code (to the prescribed extent of the reference) as if printed in the body of the code.

Appendices. Provisions in the following appendix have been adopted and are part of this code:

Appendix RF, The purpose of Appendix RF is to provide expanded *R*-value options for determining compliance with the *U*-factor criteria in Section R402.

The appendices listed below, are not part of the code and are included for informational purposes only, unless adopted by an Authority Having Jurisdiction in accordance with New York State Energy Law.

Appendices CB, RB and RL address provisions for solar capacity in new structures.

Appendices CC and RC provide requirements intended bring about net zero annual energy consumption in their respective structures.

Appendix CD provides adopting jurisdictions a compliance path toward zero net energy construction by the 2030 adoption cycle.

Appendix CE provides a stretch code through HVAC incentives to Section C403.

Appendix CF provides advanced energy credit package requirements to improve efficiency requirements in Section C406.

Appendices CG and RE provide guidance for an authority having jurisdiction wishing to provide electric vehicle readiness provisions.

Appendices CH and RK provide guidance on how to prepare commercial and residential buildings to be electric ready.

Appendices CI and RJ provide guidance for demand responsive controls for building appliances and systems.

Appendices CJ and RD provide requirements for electric energy storage readiness provisions.

Similar to Appendix CD, Appendix RG provides requirements for residential buildings intended to lower energy consumption beyond the requirements of the 2024 IECC.

Appendix RH provides a means to evaluate a building's greenhouse gas performance in accordance with ANSI/RESNET/ICC 301.

Appendix RI describes requirements for prescriptive solar PV to be installed at the time of construction.

ABBREVIATIONS AND NOTATIONS

The following table contains a list of common abbreviations and units of measurement used in this code. Some of the abbreviations are for terms defined in Chapter 2. Others are terms used in various tables and text of the code.

ABBREVIATIONS AND NOTATIONS	
[NY]	New York State Specific Change
AC	Alternating current
AFUE	Annual fuel utilization efficiency
bhp	Brake horsepower (fans)
Btu	British thermal unit
Btu/h × ft^2	Btu per hour per square foot
C-factor	See Chapter 2—Definitions
CDD	Cooling degree days
cfm	Cubic feet per minute
cfm/ft^2	Cubic feet per minute per square foot
ci	Continuous insulation
COP	Coefficient of performance
DCV	Demand control ventilation
°C	Degrees Celsius
°F	Degrees Fahrenheit
DWHR	Drain water heat recovery
DX	Direct expansion
E_c	Combustion efficiency
E_v	Ventilation efficiency
E_t	Thermal efficiency
EER	Energy efficiency ratio
EF	Energy factor
ERI	Energy rating index
ERV	Energy recovery ventilator
F-factor	See Chapter 2—Definitions
FDD	Fault detection and diagnostics
FEI	Fan energy index
FL	Full load
ft^2	Square foot
gpm	Gallons per minute
HDD	Heating degree days
hp	Horsepower
HRV	Heat recovery ventilator
HSPF	Heating seasonal performance factor
HVAC	Heating, ventilating and air conditioning
IEER	Integrated energy efficiency ratio
IPLV	Integrated Part Load Value
Kg/m^2	Kilograms per square meter
kW	Kilowatt
LPD	Light power density (lighting power allowance)
L/s	Liters per second

ABBREVIATIONS AND NOTATIONS—continued	
Ls	Liner system
m^2	Square meters
MERV	Minimum efficiency reporting value
NAECA	National Appliance Energy Conservation Act
NPLV	Nonstandard Part Load Value
Pa	Pascal
PF	Projection factor
pcf	Pounds per cubic foot
psf	Pounds per square foot
PTAC	Packaged terminal air conditioner
PTHP	Packaged terminal heat pump
R-value	See Chapter 2—Definitions
SCOP	Sensible coefficient of performance
SEER	Seasonal energy efficiency ratio
SHGC	Solar Heat Gain Coefficient
SPVAC	Single packaged vertical air conditioner
SPVHP	Single packaged vertical heat pump
SRI	Solar reflectance index
SWF	Service water heat recovery factor
U-factor	See Chapter 2—Definitions
UPS	Uninterruptible power supply
VAV	Variable air volume
VRF	Variable refrigerant flow
VT	Visible transmittance
W	Watts
w.c.	Water column
w.g.	Water gauge

CONTENTS

ECCCNYS—COMMERCIAL PROVISIONS

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