

# ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS

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## **Overview**

The checklists contained in this document are intended to help applicant teams and municipal staff plan for and assess compliance with the Ithaca Energy Code Supplement (IECS). Only basic information is provided here; the full IECS document should be referred to for detailed requirements.

The Energy Code Supplement applies to new construction, additions, and major renovations as described in Section 202.1 Applicability.<sup>1</sup>

Section 202.2 Compliance provides additional compliance details for commercial, residential, and mixed-use buildings, including additions and major renovations.

## **Building Information**

To be completed by applicant.

Property Address: [Click or tap here to enter text.](#)

This property is (check one box only, see definitions in IECS)

Residential

Commercial

The following compliance path will be used (check one box only)

Prescriptive Compliance Path/Easy Path

Performance-Based Compliance Path/Whole Building Path

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<sup>1</sup> In the Town of Ithaca version of the Energy Code Supplement, all section numbers identified in this document are preceded by "144-."

**ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS**

**PRESCRIPTIVE COMPLIANCE PATH/EASY PATH - COMMERCIAL BUILDINGS**

Projects must earn at least six points. IECS document should be consulted for complete requirements. Applicant fills out "points proposed" column. Code Enforcement Officer fills out "awarded" column.

Category	Improvement	Code Section	Points Available	Points Proposed	Points Awarded	Summary of Requirements
<b>EFFICIENT ELECTRIFICATION</b>						
EE1	Heat pumps for space heating	C402.2.1	2 - 3			2 points for air source heat pumps. 3 points for ground source heat pumps.
EE2	Heat pumps for service water heating	C402.2.2	1			1 point for water heating systems that use heat pumps.
EE3	Commercial cooking electrification	C402.2.3	3			3 points for electric cooking equipment in commercial kitchens. Prerequisite: no fossil fuel use in the building.
<b>AFFORDABILITY IMPROVEMENTS</b>						
AI1	Smaller building/room size	C402.3.1	1 - 2			Up to 2 points for smaller room sizes. Available for Hotel and Residential portions only.
AI2	Heating systems in heated space	C402.3.2	1			1 point for installing heating systems in directly heated spaces.
AI3	Efficient building shape	C402.3.3	1			1 point if exterior surface area divided by directly heated floor area is less than the maximum allowed value.
AI4	Right-lighting	C402.3.4	1			1 point for reducing overlighting and implementing other lighting improvements.
AI5	Modest window-to-wall ratio	C402.3.5	1			1 point for overall window-to-wall ratio less than 20%. Individual spaces may exceed 20%.
<b>RENEWABLE ENERGY</b>						
RE1	Renewable energy systems	C402.4.1	1 - 3			Up to 3 points for on-site or off-site renewable energy systems.
RE2	Biomass systems	C402.4.2	3			3 points for biomass space heating systems.
<b>OTHER POINTS</b>						
OP1	Development density	C402.5.1	1			1 point for achieving sufficient development density on the building parcel.*
OP2	Walkability	C402.5.2	1			1 point if the building meets the walkability criteria.*
OP3	Electric Vehicle Parking Spaces	C402.5.3	1			1 point for installing electric vehicle parking spaces and related infrastructure.*
OP4	Adaptive reuse	C402.5.4	1			1 point for substantial re-purpose of existing building.
OP5	Meet NY Stretch Code	C402.5.5	1			1 point for complying with NYStretch Energy Code
OP6	Custom energy improvement	C402.5.6	1 - 2			Up to 2 points for reduction in energy use.
<b>TOTAL POINTS</b>						
* Note: A maximum of two points total may be earned for points OP1, OP2, and OP3 combined.						

**ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS**

**PRESCRIPTIVE COMPLIANCE PATH/EASY PATH - RESIDENTIAL BUILDINGS**

Projects must earn at least six points. IECS document should be consulted for complete requirements. Applicant fills out "points proposed" column. Code Enforcement Officer fills out "awarded" column.

Category	Improvement	Code Section	Points Available	Points Proposed	Points Awarded	Summary of Requirements
<b>EFFICIENT ELECTRIFICATION</b>						
EE1	Heat pumps for space heating	R502.2.1	3 - 5			3 points for air source heat pumps. 5 points for ground source heat pumps.
EE2	Heat pumps for service water heating	R502.2.2	1			1 point for water heating systems that use heat pumps.
EE3	Commercial cooking electrification	R502.2.3	3			3 points for electric cooking equipment in commercial kitchens. Prerequisite: no fossil fuel use in the building.
EE4	Residential cooking and clothes drying electrification	R502.2.4	1			1 point for electric stoves and ventless heat pump clothes dryers. Prerequisite: no fossil fuel use in the building.
<b>AFFORDABILITY IMPROVEMENTS</b>						
AI1	Smaller building/room size	R502.3.1	1 - 2			Up to 2 points for smaller room sizes. Available for Hotel and Residential portions only.
AI2	Heating systems in heated space	R502.3.2	1			1 point for installing heating systems in directly heated spaces.
AI3	Efficient building shape	R502.3.3	1			1 point if exterior surface area divided by directly heated floor area is less than the maximum allowed value.
AI5	Modest window-to-wall ratio	R502.3.4	1			1 point for overall window-to-wall ratio less than 20% (individual spaces may exceed 20%).
<b>RENEWABLE ENERGY</b>						
RE1	Renewable energy systems	R502.4.1	1 - 3			Up to 3 points for on-site or off-site renewable energy systems.
RE2	Biomass systems	R502.4.2	5			5 points for biomass space heating systems.
<b>OTHER POINTS</b>						
OP1	Development density	R502.5.1	1			1 point for achieving sufficient development density on the building parcel.*
OP2	Walkability	R502.5.2	1			1 point if the building meets the walkability criteria.*
OP3	Electric Vehicle Parking Spaces	R502.5.3	1			1 point for installing electric vehicle parking spaces and related infrastructure.*
OP4	Adaptive reuse	R502.5.4	1			1 point for substantial re-purpose of existing building.
OP5	Meet NY Stretch Code	R502.5.5	2			2 points for complying with NYStretch Energy Code
OP6	Custom energy improvement	R502.5.6	1 - 2			Up to 2 points for reduction in energy use.
<b>TOTAL POINTS</b>						
<i>* Note: A maximum of two points total may be earned for points OP1, OP2, and OP3 combined.</i>						

## ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS

### PERFORMANCE-BASED COMPLIANCE PATH/WHOLE BUILDING PATH - COMMERCIAL BUILDINGS

Buildings must comply using one of the performance-based options summarized below. Applicant: check boxes in left-hand column showing intended design, construction, and documentation requirements that will be met. Code Enforcement Officer: check boxes in right-hand column verifying completed requirements.

#### C403.2 LEED-based and Energy Calculation-based Compliance

##### **Design and Construction Requirements**

Buildings shall meet the design requirements of one of the following:

- LEED v4 for Building Design + Construction, 17 LEED points total in the Optimize Energy Performance credit and the Renewable Energy Production credit of the Energy and Atmosphere section
- 40% savings relative to ASHRAE Standard 90.1-2013 or 46% savings relative to ASHRAE Standard 90.1-2010

##### **Documentation Requirements**

Documentation shall include either:

- Design approval by GBCI

OR both of the following:

- Complete input and output reports of the energy model
- Approval of the energy model by NYSERDA, U.S. Department of Energy, Energize NY, or another agency approved by the Code Enforcement Officer

*Note: LEED certification is NOT required.*

#### C403.3 Passive House-based Compliance

##### **Design and Construction Requirements**

Buildings shall meet the design requirements of one of the following:

- PHIUS+ Passive Building Standard from Passive House Institute US
- Passive House Classic Standard from Passive House Institute

##### **Documentation Requirements**

Documentation shall include at least one of the following:

- Pre-certification letter from an Accredited Passive House Certifier. All documentation used to show achievement of the requirements. *Note: Certification is not required for this option.*
- Documentation of Passive House certification.

## ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS

### **C403.4 Greenhouse Gas Emissions Calculation-based Compliance**

#### **Design and Construction Requirements**

Buildings shall meet the design requirements of all of the following:

- The building shall demonstrate a reduction in GHG emissions of not less than 40% as compared to the baseline building. GHG emissions reductions shall be shown through energy modeling that complies with Appendix G of ASHRAE Standard 90.1-2013.
- All requirements of IECS provisions C403.4.1 through C403.4.6 must be satisfied. These provisions are too detailed to summarize here.

#### **Documentation Requirements**

Documentation shall include all of the following:

- A report, signed and stamped by an accredited third-party energy professional, showing the results of all calculations, assumptions, inputs, and outputs for the energy model
- A letter, signed and stamped by an accredited third-party energy professional, stating that proposed total GHG emissions for the building are at least 40% less than the GHG emissions of the baseline building.
- The City/Town reserves the right to require additional documentation and/or additional third-party review and analysis by a consultant selected by the City/Town, at the expense of the applicant. All such documentation shall be submitted, and fee shall be paid, prior to issuance of a building permit.

### **C403.5 Greenhouse Gas Emissions Calculation-based Compliance for Additions**

May only be used for additions that are showing compliance together with the existing building.

#### **Design and Construction Requirements**

Buildings shall meet the design requirements of all of the following:

- The addition and the existing building, together as a whole, shall be shown to have lower total GHG emissions than the original existing building.
- Current and proposed GHG emissions shall be calculated following the requirements of the GHG Emissions Calculation Method (C403.4).

#### **Documentation Requirements**

Documentation shall include all of the following:

- An energy study of the existing building that includes energy use from at least 12 consecutive months of the most recent 24 months at the time of building permit application.
- An energy study that shows anticipated energy use for the new addition and modified existing building.
- A report, signed and stamped by an accredited energy professional, showing the results of all calculations, assumptions, inputs, and outputs for the energy model
- A letter, signed and stamped by an accredited third-party energy professional, stating that proposed total GHG emissions for the building and addition together are less than the GHG emissions for the existing building.
- The City/Town reserves the right to require additional documentation and/or additional third-party review and analysis by a consultant selected by the City/Town, at the expense of the applicant. All such documentation shall be submitted, and fee shall be paid, prior to issuance of a building permit.

## ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS

### PERFORMANCE-BASED COMPLIANCE PATH/WHOLE BUILDING PATH - RESIDENTIAL BUILDINGS

Buildings must comply using one of the performance-based options summarized below. Applicant: check boxes in left-hand column showing intended design, construction, and documentation requirements that will be met. Code Enforcement Officer: check boxes in right-hand column verifying completed requirements.

#### **R503.2 Energy Rating Index-based Compliance**

May only be used for residential buildings of not more than three stories.

##### **Design and Construction Requirements**

Buildings shall meet the design requirements of all of the following:

- The building shall comply with all requirements of Subsection R406 Energy Rating Index Compliance Alternative of the 2020 Energy Conservation Construction Code of NYS (ECCCNYS R406). Where the IECS requirements are more stringent than the requirements of ECCCNYS R406, IECS requirements shall prevail.
- The rated design shall be shown to have an Energy Rating Index (ERI) less than or equal to 40 when compared to the ERI reference design.

##### **Documentation Requirements**

- Compliance documentation shall be submitted as detailed in ECCCNYS R406.

#### **R503.3 National Green Building Standard-based compliance**

##### **Design and Construction Requirements**

- Using the National Green Building Standard (NGBS), the building shall earn no less than 80 NGBS Energy Efficiency points. NGBS certification is not necessary.

##### **Documentation Requirements**

- The design professional or energy professional documenting compliance will provide a signed statement that the design meets the requirements of this subsection, and documentation showing compliance.

#### **R503.4 Passive House-based Compliance**

##### **Design and Construction Requirements**

Buildings shall meet the design requirements of one of the following.

- PHIUS+ Passive Building Standard from Passive House Institute US
- Passive House Classic Standard from Passive House Institute

##### **Documentation Requirements**

Documentation shall include at least one of the following:

- Pre-certification letter from an Accredited Passive House Certifier. All documentation used to show achievement of the requirements. *Note: Certification is not required for this option.*
- Documentation of Passive House certification.

## ITHACA ENERGY CODE SUPPLEMENT - COMPLIANCE CHECKLISTS

### **R503.5 Greenhouse Gas Emissions Calculation-based Compliance**

#### **Design and Construction Requirements**

Buildings shall meet the design requirements of all of the following:

- The building shall demonstrate a reduction in GHG emissions of not less than 40% as compared to the baseline building. GHG emissions reductions shall be shown through energy modeling that complies with Appendix G of ASHRAE Standard 90.1-2013 (for residential buildings four stories and greater and all mixed-use buildings classified as residential) or RESNET-HERS (for residential buildings of not more than three stories).
- All requirements of IECS provisions R503.5.1 through R503.5.6 must be satisfied. These provisions are too detailed to summarize here.

#### **Documentation Requirements**

Documentation shall include all of the following:

- A report, signed and stamped by an accredited third-party energy professional, showing the results of all calculations, assumptions, inputs, and outputs for the energy model
- A letter, signed and stamped by an accredited third-party energy professional, stating that proposed total GHG emissions for the building are at least 40% less than the GHG emissions of the baseline building.
- The City/Town reserves the right to require additional documentation and/or additional third-party review and analysis by a consultant selected by the City/Town, at the expense of the applicant. All such documentation shall be submitted, and fee shall be paid, prior to issuance of a building permit.

### **R503.6 Greenhouse Gas Emissions Calculation-based Compliance for Additions**

May only be used for additions that are showing compliance together with the existing building.

#### **Design and Construction Requirements**

Buildings shall meet the design requirements of all of the following:

- The addition and the existing building, together as a whole, shall be shown to have lower total GHG emissions than the original existing building.
- Current and proposed GHG emissions shall be calculated following the requirements of the GHG Emissions Calculation Method (R503.5).

#### **Documentation Requirements**

Documentation shall include all of the following:

- An energy study of the existing building that includes energy use from at least 12 consecutive months of the most recent 24 months at the time of building permit application.
- An energy study that shows anticipated energy use for the new addition and modified existing building.
- A report, signed and stamped by an accredited energy professional, showing the results of all calculations, assumptions, inputs, and outputs for the energy model, and
- A letter, signed and stamped by an accredited third-party energy professional, stating that proposed total GHG emissions for the building and addition together are less than the GHG emissions for the existing building.
- The City/Town reserves the right to require additional documentation and/or additional third-party review and analysis by a consultant selected by the City/Town, at the expense of the applicant. All such documentation shall be submitted, and fee shall be paid, prior to issuance of a building permit.