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Division of Policy Development
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Tony Evers, Governor
Dan Hereth, Secretary

VIRTUAL/TELECONFERENCE
WISCONSIN ADVISORY COUNCIL ON BUILDING SUSTAINABILITY
Virtual, 4822 Madison Yards Way, Madison
Contact: Brad Wojciechowski (608) 266-2112
June 6, 2025

The following agenda describes the issues that the Council plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a record of the actions of the Council.

AGENDA

9:00 A.M.

OPEN SESSION – CALL TO ORDER – ROLL CALL

A. Adoption of Agenda (1-2)

B. Approval of Minutes of March 7, 2025 (3-4)

C. Reminders: Conflicts of Interest, Scheduling Concerns

D. Introductions, Announcements and Recognition

E. Administrative Matters – Discussion and Consideration
1. Department, Staff and Council Updates
2. Council Members
   a. Austin, Benjamin V.
   b. Eber, Alan H.
   c. Hackel, Scott P.
   d. Herrmann, Monika S.
   e. Nergard, Missy A.
   f. Nino Torres, Victor G.
   g. O'Brien, Timothy M.
   h. Sayu, Francisco J.
   i. Swartz, Keith A.
   j. Weber, Christina L.

F. Presentation: Darren Port, Slipstream – Discussion and Consideration (5-40)
1. Wisconsin and the 2024 IECC
2. RECI Project Updates

G. Update on Code Council Meetings – Discussion and Consideration

H. Administrative Rule Matters – Discussion and Consideration

I. Legislation and Policy Matters – Discussion and Consideration

J. Discussion and Consideration of Items Added After Preparation of Agenda:
1. Introductions, Announcements and Recognition
2. Administrative Matters
3. Election of Officers
4. Education and Examination Matters
5. Credentialing Matters
6. Legislative and Policy Matters
7. Administrative Rule Matters
8. Council Liaison Training and Appointment of Mentors
9. Informational Items

K. Public Comments

L. ADJOURNMENT

NEXT MEETING: SEPTEMBER 5, 2025

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MEETINGS AND HEARINGS ARE OPEN TO THE PUBLIC, AND MAY BE CANCELLED WITHOUT NOTICE.

Times listed for meeting items are approximate and depend on the length of discussion and voting. All meetings are held virtually unless otherwise indicated. In-person meetings are typically conducted at 4822 Madison Yards Way, Madison, Wisconsin, unless an alternative location is listed on the meeting notice. In order to confirm a meeting or to request a complete copy of the board's agenda, please visit the Department website at https:\\dsps.wi.gov. The board may also consider materials or items filed after the transmission of this notice. Times listed for the commencement of any agenda item may be changed by the board for the convenience of the parties. The person credentialed by the board has the right to demand that the meeting at which final action may be taken against the credential be held in open session. Requests for interpreters for the hard of hearing, or other accommodations, are considered upon request by contacting the Affirmative Action Officer or reach the Meeting Staff by calling 608-267-7213.

VIRTUAL/TELECONFERENCE
WISCONSIN ADVISORY COUNCIL ON
BUILDING SUSTAINABILITY
MEETING MINUTES
MARCH 7, 2025

PRESENT: Benjamin Austin, Alan Eber, Scott Hackel, Monika Herrmann, Missy Nergard, Victor Nino Torres, Timothy O'Brien, Keith Swartz,

ABSENT: Francisco Sayu, Christina Weber

STAFF: Brad Wojciechowski, Executive Director; Joseph Ricker, Legal Counsel; Jacob Pelegrin, Rules Administrative Coordinator; Tracy Drinkwater, Board Administration Specialist; and other DSPS Staff

CALL TO ORDER

Missy Nergard, Chairperson, called the meeting to order at 9:00 a.m. A quorum of eight (8) members was confirmed.

ADOPTION OF AGENDA

MOTION: Alan Eber moved, seconded by Timothy O'Brien, to adopt the Agenda as published. Motion carried unanimously.

APPROVAL OF MINUTES OF DECEMBER 6, 2024

MOTION: Timothy O'Brien moved, seconded by Victor Nino Torres, to adopt the Minutes of December 6, 2024, as published. Motion carried unanimously.

ADMINISTRATIVE MATTERS

Election of Officers

Chairperson

NOMINATION: Alan Eber nominated Missy Nergard for the Office of Chairperson. Missy Nergard accepted the nomination.

Brad Wojciechowski, Executive Director, called for nominations three (3) times.

Missy Nergard was elected as Chairperson by unanimous voice vote.

Vice Chairperson

NOMINATION: Timothy O'Brien nominated Timothy O'Brien for the Office of Vice Chairperson.

Brad Wojciechowski, Executive Director, called for nominations three (3) times.

Timothy O'Brien was elected as Vice Chairperson by unanimous voice vote.

Secretary

NOMINATION: Missy Nergard nominated Christina Louise Weber for the Office of Secretary.

Brad Wojciechowski, Executive Director, called for nominations three (3) times.

Christina Louise Weber was elected as Secretary by unanimous voice vote.

2025 ELECTION RESULTS	
Chairperson	Missy Nergard
Vice Chairperson	Timothy O'Brien
Secretary	Christina Louise Weber

PRESENTATION: DARREN PORT, SLIPSTREAM

Cost-Effectiveness Analysis of the 2021 And 2024 IECC for the State of Wisconsin

MOTION: Timothy O'Brien moved, seconded by Monika Herrmann, to acknowledge and thank Darren Port, John Kroll, Cynthia Segura and Sarah Wells of Slipstream and Bill Deters of PSD Consulting for their appearance and presentation to the Council. Motion carried unanimously.

ADJOURNMENT

MOTION: Timothy O'Brien moved, seconded by Victor Nino Torres, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 10:27 a.m.

State of Wisconsin
Department of Safety & Professional Services

AGENDA REQUEST FORM

1) Name and title of person submitting the request: **Brad Wojciechowski, Executive Director**		**2) Date when request submitted:** **5/27/2025** **Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting**
3) Name of Board, Committee, Council, Sections: Choose an item. **Wisconsin Advisory Council on Building Sustainability**		
4) Meeting Date: **6/4/2025**	**5) Attachments:** ☒ **Yes** ☐ **No**	6) How should the item be titled on the agenda page? Presentation: Darren Port, Slipstream – Discussion and Consideration 1) Wisconsin and the 2024 IECC 2) RECI Project Updates
7) Place Item in: ☒ **Open Session** ☐ **Closed Session**	**8) Is an appearance before the Board being scheduled?** *(If yes, please complete Appearance Request for Non-DSPS Staff)* ☐ **Yes <Appearance Name(s)>** ☐ **No**	**9) Name of Case Advisor(s), if applicable:** **<Click Here to Add Case Advisor Name or N/A>**
10) Describe the issue and action that should be addressed: **<Click Here to Add Description>**		
11) Authorization **5/27/2025** **Signature of person making this request** **Date** **Supervisor (Only required for post agenda deadline items)** **Date** **Executive Director signature (Indicates approval for post agenda deadline items)** **Date**		
Directions for including supporting documents: 1. **This form should be saved with any other documents submitted to the Agenda Items folders.** 2. **Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director.** 3. **If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.**		

PROJECT PARTNERS

cleanwisconsin

WISCONSIN LOCAL GOVERNMENT CLIMATE COALITION

MEEA MIDWEST ENERGY EFFICIENCY ALLIANCE

nbi new buildings institute

slipstream

Wisconsin and the 2024 IECC

Presentation to the Wisconsin Advisory Council on Building Sustainability

June 6, 2025

THIS PROJECT is supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Building Technologies Office—DE-FOA-0002813—Bipartisan Infrastructure Law Resilient and Efficient Codes Implementation.

Agenda

Wisconsin Resilient and Efficient Codes Implementation (RECI) Project Updates

Overview 2024 IECC Changes

Discussion 2024 IECC for Wisconsin

Wisconsin RECI Project Updates

Wisconsin Energy Codes Collaborative Update

PROJECT PARTNERS Clean Wisconsin • Wisconsin Local Government Climate Coalition • Midwest Energy Efficiency Alliance • New Buildings Institute • Slipstream

Wisconsin Energy Codes Collaborative

Purpose: An energy code collaborative is a forum for experts from diverse stakeholder groups impacted by energy codes to work together toward common interests and goals related to energy code adoption and compliance.

Key goals:

- Align stakeholder interests (builders, designers, code officials, governments, building occupants, the public) around shared goals and foster collaboration to improve buildings through energy codes.
- Identify challenges to energy code compliance and address by proposing policies, training, and support
- Be a trusted source for best practices and compliance guidance

Reach out to Sarah (swells@slipstreaminc.org) if you are interested in joining future meetings.

Codes Collaborative Meeting Overview

Meeting 1: December 2024
Meeting 2: March 2025
Meeting 3: June 17, 2025

- Planning to split into subcommittee groups
- Begin to plan for development of actions/tools/resources that can address these issues

Baseline Studies Update

New Construction Baseline Studies (Residential, Commercial, and Multifamily)

Single Family Study Updates

- 25% completed
- Branching out across the state

Multifamily/Commercial Study Updates

- 10% completed
- Recruitment efforts always ongoing

- Additional buildings needed for study

Wisconsin Energy Code Technical Advisor Program Update

Upcoming Virtual Training

June 11- Residential Heat and Insulation, 9:00 a.m. to 10:00 a.m.

June 18 - Residential HVAC Equip Sizing Man J, S & D, 9:00 to 10:30 a.m.

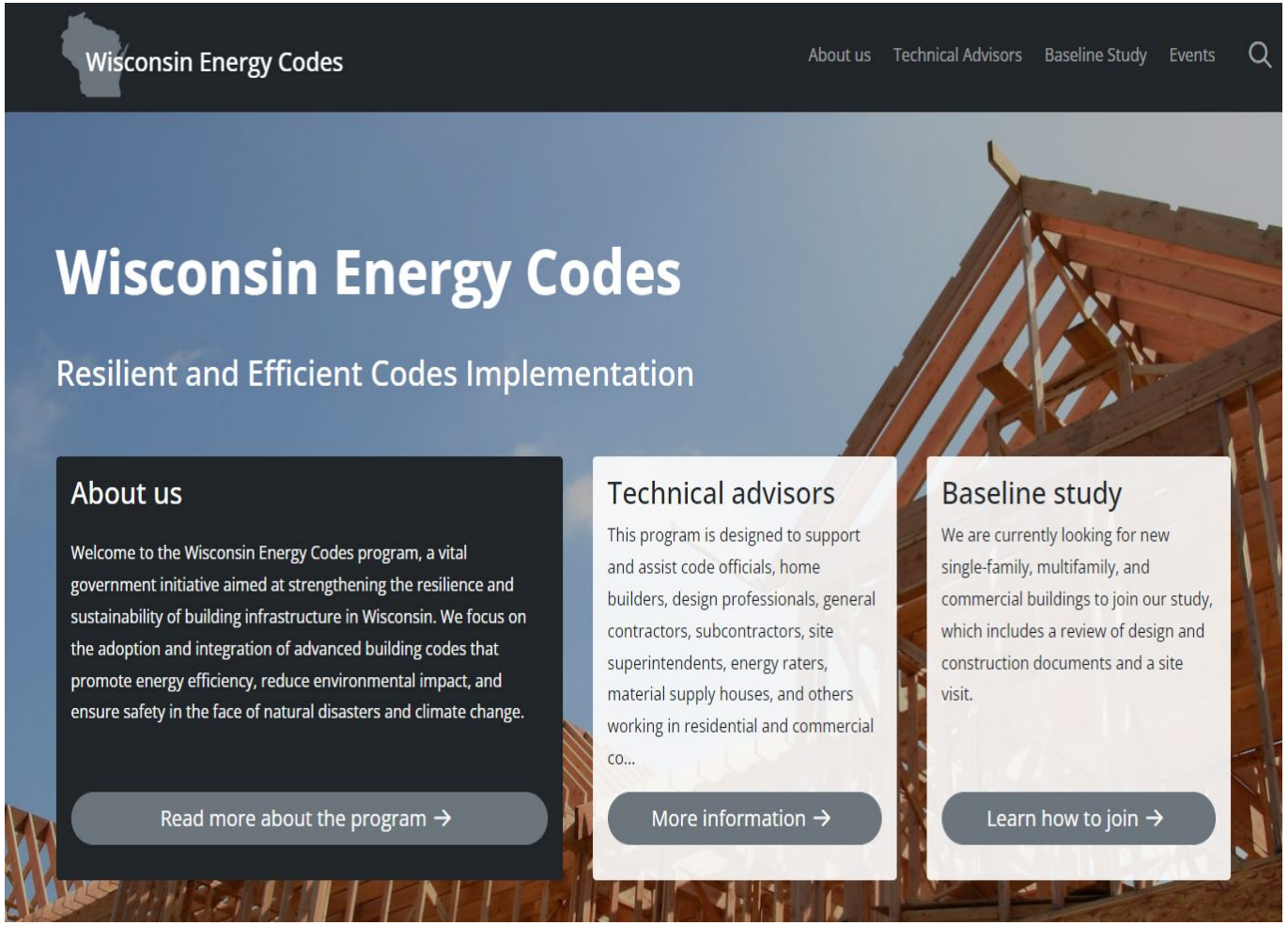
June 23 - Multi-family construction and the Energy Code, 9:00 to 10:00 a.m.

Registration links can be found at: www.wienergycodes.org/events/

For Information on Technical Advisor and Trainings

Robert Oakley
Wisconsin in-state contact
Senior Technical Specialist
roakley@psdconsulting.com

Bill Deters
Senior Technical Specialist
wdeters@psdconsulting.com

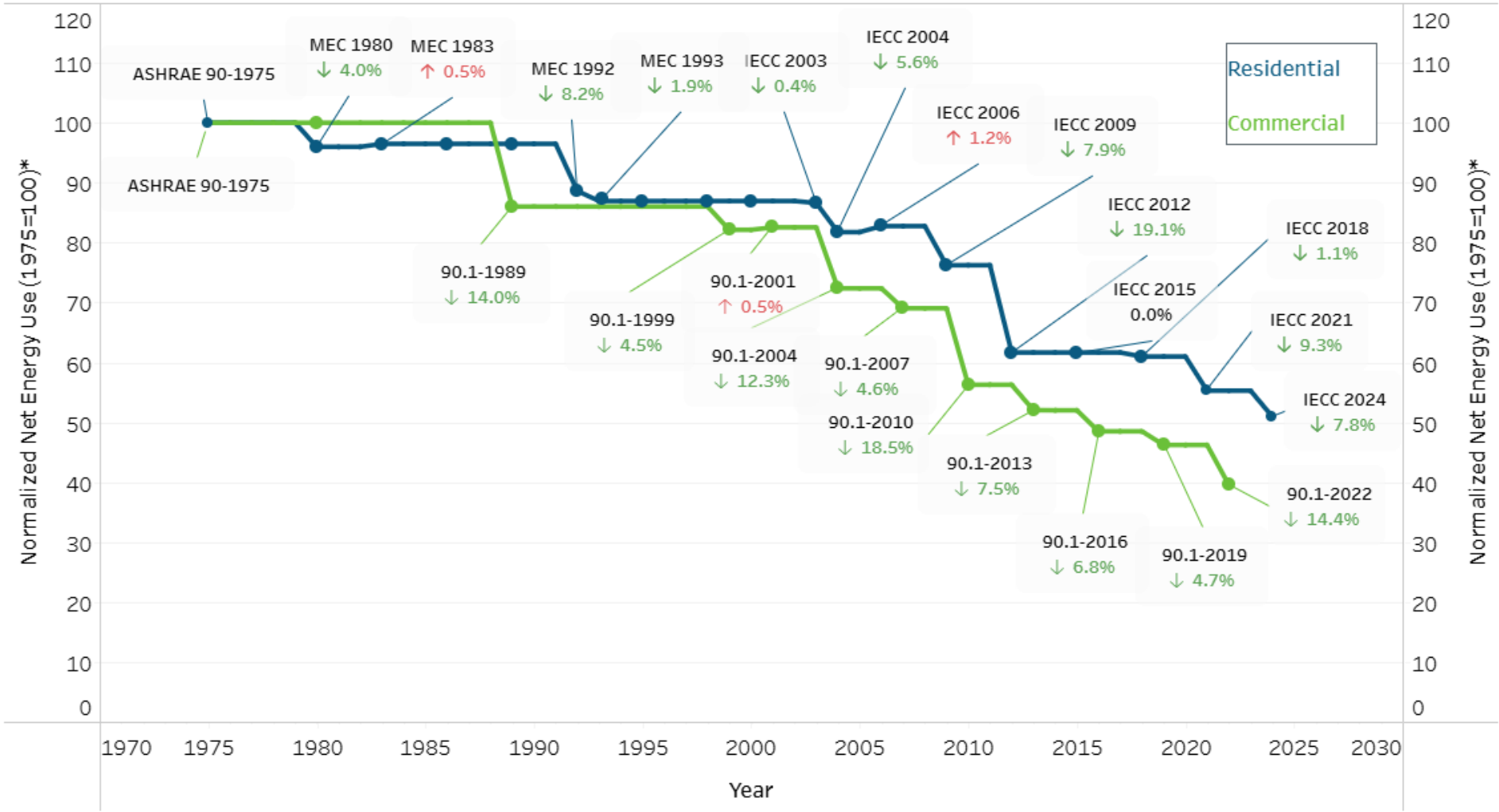


www.wienergycodes.org

2024 IECC Residential Overview

ENERGY Estimated Improvement in Residential & Commercial Energy Codes (1975 - 2024)

Pacific Northwest NATIONAL LABORATORY



*Net energy use includes the contribution of renewable energy generation

2024 IECC NATIONAL SAVINGS

The Department of Energy issued a 2024 IECC Residential code analysis, the results of which indicate that residential buildings meeting the 2024 IECC incur the following savings compared to the 2021 IECC on a weighted national average basis:

- 7.80 percent annual reduction in site energy use intensity (EUI);
- 6.80 percent annual reduction source EUI;
- 6.60 percent annual savings in energy cost; and
- 6.51 percent carbon emissions reduction.

From DOE Determination published December 30, 2024
https://www.energycodes.gov/determinations

Wisconsin Energy Savings

2021 IECC Residential Savings for Homeowners Compared to Wisconsin UDC

- Average annual savings of **21%** compared to the Wisconsin UDC
- Equating to **$817** of annual utility bill savings

Cash Flow Year One	Cash Flow 30 Year
• Amortized costs and benefits over a typical 30-year mortgage • First-time homebuyers positive cumulative cash flow in the ***first four*** years • Average homebuyers positive cumulative cash flow in the ***first six*** years	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately **$10,600** in life-cycle cost savings

Wisconsin

Year One	Over 30 Years
Wisconsin residents could expect to save over **$12,210,000** in energy costs and **56,100 metric tons** in avoided CO_2 emissions	Wisconsin homeowners would save **3.26 billion dollars** in energy savings and reduce CO_2 emissions by **25.8 MMT**

2024 IECC Residential Savings for Homeowners Compared to Wisconsin UDC

- Average annual savings of **24%** compared to the Wisconsin UDC
- Equating to **$993** of annual utility bill savings

Cash Flow Year One	Cash Flow 30 Year
• Amortized costs and benefits over a typical 30-year mortgage • First-time homebuyers positive cumulative cash flow in the ***first three*** years • Average homebuyers positive cumulative cash flow in the ***first five*** years	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately **$11,800** in life-cycle cost savings

Wisconsin

Year One	Over 30 Years
Wisconsin residents could expect to save over **$13,650,000** in energy costs and **62,700 metric tons** in avoided CO_2 emissions	Wisconsin homeowners would save **3.62 billion dollars** in energy savings and reduce CO_2 emissions by **28.8 MMT**

Wisconsin 2024 IECC by Climate Zone

Table 1: 2021 IECC to 2024 IECC Average Percent Saving for Wisconsin Climate Zones		
Climate Zone	**Energy Savings**	**Emissions**
5	5.53	5.36
6	5.64	4.87

Table 2: 2021 IECC to 2024 IECC Average Percent Saving for Wisconsin by Building Type		
Building Type	**Energy Savings**	**Emissions**
Average for Single Family	6.54	6.43
Average for Multifamily	7.14	7.18

Key 2024 IECC Changes

- 2024 IECC Format Changes
- 2024 IECC Climate Zones
- Compliance Paths
- U-Factors and Fenestration Requirements
- 2024 IECC R-Values
- Air Leakage
- Residential Ducts
- Simulated Building Performance

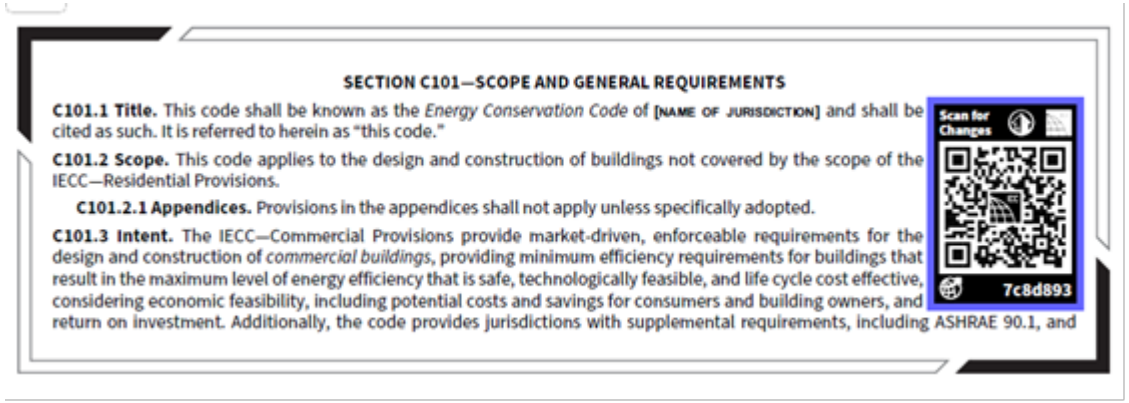
- Energy Rating Index
- Additional Efficiency Requirements
- Residential System Changes
- Lighting and Controls
- Existing Buildings
- Alterations/Substantial Improvements
- Residential Appendices

2024 IECC Format Changes

The 2024 IECC includes format changes to the text and tables.

The text is in a single column instead of two, which is easier to read and consistent with ASHRAE standards.

QR codes identify code changes at the beginning of each section and provide links to additional details.



SECTION C101—SCOPE AND GENERAL REQUIREMENTS

C101.1 Title. This code shall be known as the *Energy Conservation Code* of [NAME OF JURISDICTION] and shall be cited as such. It is referred to herein as "this code."

C101.2 Scope. This code applies to the design and construction of buildings not covered by the scope of the IECC—Residential Provisions.

C101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

C101.3 Intent. The IECC—Commercial Provisions provide market-driven, enforceable requirements for the design and construction of *commercial buildings*, providing minimum efficiency requirements for buildings that result in the maximum level of energy efficiency that is safe, technologically feasible, and life cycle cost effective, considering economic feasibility, including potential costs and savings for consumers and building owners, and return on investment. Additionally, the code provides jurisdictions with supplemental requirements, including ASHRAE 90.1, and

TABLE R402.1.2 MAXIMUM ASSEMBLY *U*-FACTORS[a] AND FENESTRATION REQUIREMENTS

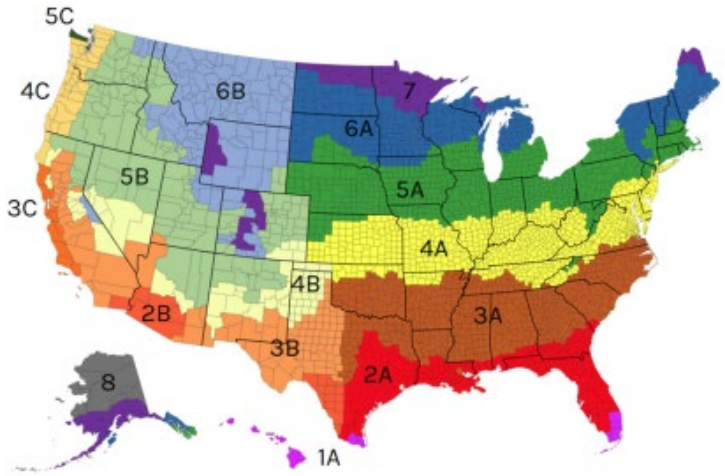
CLIMATE ZONE	0	1	2	3	4 EXCEPT MARINE	5 AND MARINE 4	6	7 AND 8
Vertical fenestration *U*-factor	0.50	0.50	0.40	0.30	0.30	0.28[d]	0.28[d]	0.27[d]
Skylight *U*-factor	0.60	0.60	0.60	0.53	0.53	0.50	0.50	0.50
Glazed vertical fenestration SHGC	0.25	0.25	0.25	0.25	0.40	NR	NR	NR
Skylight SHGC	0.28	0.28	0.28	0.28	0.40	NR	NR	NR
Ceiling *U*-factor	0.035	0.035	0.030	0.030	0.026	0.026	0.026	0.026
Insulation entirely above roof deck	0.039	0.039	0.039	0.039	0.032	0.032	0.032	0.028
Wood-framed wall *U*-factor	0.084	0.084	0.084	0.060	0.045	0.045	0.045	0.045
Mass wall *U*-factor[b]	0.197	0.197	0.165	0.098	0.098	0.082	0.060	0.057
Floor *U*-factor	0.064	0.064	0.064	0.047	0.047	0.033	0.033	0.028
Basement wall *U*-factor	0.360	0.360	0.360	0.091[c]	0.059	0.050	0.050	0.050
Unheated slab *F*-factor[e]	0.73	0.73	0.73	0.54	0.51	0.51	0.48	0.48
Heated slab *F*-factor[e]	0.74	0.74	0.74	0.66	0.66	0.66	0.66	0.66
Crawl space wall *U*-factor	0.477	0.477	0.477	0.136	0.065	0.055	0.055	0.055

2024 IECC Climate Zones

The 2021 IECC CZ changes are the first change in nearly 20 years.

82.68 percent of Wisconsin's floor area was reclassified, the highest percentage in the country, and Milwaukee and Dane Counties are among the top ten counties nationally reclassified.

The 2024 IECC climate zones remain unchanged from the 2021 IECC; Wisconsin is CZ 5A/6A. However, these climate zones differ from the current Wisconsin UDC climate zones of CZ 6/7.



Code	Climate Zone	
2009	6A	7
WI UDC*	6A	7
2021	5A	6A
2024	5A	6A

2024 IECC Compliance Paths

Prescriptive Compliance Option—Required for compliance with various efficiency practices. The prescriptive compliance path will require additional efficiency practices from dozens of measures with assigned credits.

Simulated Performance Option—Uses energy modeling to compare the proposed dwelling's energy costs to a reference home.

Energy Rating Index Option—Uses energy modeling to calculate an ERI for the proposed dwelling, which must be less than the maximum allowed for the climate zone.

Total UA Alternative - was renamed *Component Performance Alternative* to accompany the F-factor change.

CODE	Prescriptive	Performance	UA	ERI	WI Efficient Equipment
2009	X	X	X		
WI UDC*	X	X	X		X
2021	X	X	X	X	
2024	X	X	X	X	

*Based on 2009 IECC with amendments

Residential U-Factor

Residential U-Factor					
CODE	Climate Zone	Fenestration	Basement Wall	Crawl Space Wall	Slab
2009	6A	0.35	0.050	0.065	0.033
	7	0.35	0.050	0.065	0.028
WI UDC*	6A	0.30	0.045	0.045	0.033
	7	0.30	0.045	0.045	0.033
2021	5A	0.30	0.050	0.055	0.033
	6A	0.30	0.050	0.055	0.033
2024	5A	0.28	0.050	0.055	
	6A	0.28	0.050	0.055	

*Based on 2009 IECC with amendments

Several numerical values have changed compared to the 2021 IECC. In most cases, the values have become more stringent or energy efficient.

2024 Slab		
	Climate Zone	F-Factor*
Unheated Slab	5A	0.51
	6A	0.48
Heated Slab	5A	0.66
	6A	0.66

F-factor is a calculation that estimates the amount of heat lost through a slab-on-grade floor

Residential R-Value

The 2021 IECC R-Values more stringent or equivalent to the UDC and model 2009 IECC, w/ exceptions.

2024 IECC

- 2024 IECC ceiling R-value has been lowered to 49 from 60.
- Expanded cavity and Continuous Insulation (CI) options
- Separate skylight SHGC values.

Residential R-Values and Fenestration

CODE	Climate Zone	Glazed Fenestration SHGC	Ceiling	Wood Frame Wall	Floor	Basement Wall	Slab R-Value and Depth	Crawl Space
2009	6A	NR	49	20 or 13+5	30	15/19	10, 4ft	10/13
	7		49	21	38	15/19	10, 4ft	10/13
WI UDC*	6A	NR	49	21	30	15/19	10/20	15/19
	7		49	19+5	38	15/19	10/20	15/19
2021	5A	0.4	60	30 or 20+5 or 0+20	30	15 or 19 or 13+5	10, 4ft	15/19 or 13&5
	6A	NR	60		30		10, 4ft	
2024	5A	NR	49	30 or 20+5 or 0+20	30 or 19+7.5 or 20	15 or 19 or 13+5	*See 2024 Slab*	15 or 19 or 13&5
	6A		49					

2024 Slab		
	Climate Zone	R-Value & Depth
Unheated Slab	5A	10, 3ft
	6A	10, 4ft
Heated Slab	5A	10, 3ft & R-5 full slab
	6A	10, 4ft & R-5 full slab

Air Leakage

2024 Air Leakage Rates

2009 IECC maximum air leakage under any compliance path is 7 ACH50

2021 IECC all climate zones 3 ACH - maximum air leakage under any compliance path is 5 ACH50

2024 IECC Prescriptive compliance
- Climate Zone 5: 3.0 ACH50
- Climate Zone 6: 2.5 ACH50

Maximum 4ACH50 any path

2024 IECC Performance
- 5ACH50 drops to 4.0 ACH50

2024 IECC Multifamily increased stringency from 0.30 cfm/ft2 to 0.27

2024 added sampling protocol for buildings eight or more units:
- Seven units or 20%, whichever is greater
- If unit fails, corrective action retest the unit until it passes
- For each fail, test three more units, including the corrected unit

2024 IECC Exceptions:
Buildings ≤1500ft otherwise 0.03cfm/sq drops to 0.27

2024 IECC RESIDENTIAL DUCTS

The 2024 International Energy Conservation Code (IECC) requires that duct leakage be limited to specific levels during rough-in and post-construction testing.

The 2024 IECC contains technical, editorial, and organizational changes.

- Revised and added definitions
- Added duct system design requirements
- Ducts serving one or two dwelling units: ACCA Manual D required
- More than two units: ASHRAE Handbook of Fundamentals, ACCA Man D, or equivalent
- Added test exemption for ductless systems (< 10 ft of ductwork)
- Sampling protocol added

Specific measures, leakage rates, and location credits based on the compliance path and if ducts are in conditioned or unconditioned spaces.

Simulated Performance Path

Key Changes:

- **Envelope Backstop**
- **Energy Cost Compliance**
- **Equipment In Reference Home**
- **Ductwork in Reference Home**
- **Requirements in Table R405.2**
- **Annual energy cost requirements (80% of the reference design for mixed-fuel buildings and 85% for all-electric buildings**

The Simulated Performance Path allows for demonstrating code compliance by using energy modeling to compare a proposed dwelling's energy costs with those of a reference home.

The Simulated Performance Path in the 2024 IECC provides a flexible framework for achieving energy efficiency through simulation, allowing for trade-offs between design elements while still requiring adherence to mandatory requirements and additional efficiency measures.

ENERGY RATING INDEX

The 2024 IECC Energy Rating Index (ERI) requirements have been adjusted to lower the maximum ERI value compared to the 2021 IECC.

On-site solar PV - no limit on how much PV can contribute to code compliance. However, with Onsite Power Production (OPP), the ERI is lower.

ERI Air Leakage - air leakage to be as high as 4ACH50 for buildings or dwelling units in any climate zone utilizing the ERI path.

ERI Average for Larger Multifamily Buildings—This change allows the code official to allow the average ERI for buildings with 20 dwelling units or larger.

The 2024 IECC also includes provisions for alternative ERI path options, like Section R406, which includes a thermal backstop.

Maximum Energy Rating Index (ERI)			
Climate Zone	2021 IECC	2024 IECC	
	ERI	ERI without Onsite Power Production	ERI with Onsite Power Production
5	55	54	43
6	54	53	43

ADDITIONAL EFFICIENCY REQUIREMENTS

In the 2024 IECC, "additional efficiency requirements" requires builders to achieve a certain number of points by selecting from a list of energy efficiency measures, when using the prescriptive compliance path.

Unlike the 2021 IECC, the Additional Efficiency Requirements do not apply to Simulated Performance or ERI Pathways.

In the 2021 IECC, users pick one option from five.

Additional Efficiency Requirements

- **Use for the prescriptive compliance only**
- **New 2024 format using a system of measures/credits.**
- **A minimum of two measures must be implemented.**
- **A minimum of 10 credits must be achieved in addition to meeting all mandatory requirements.**
- **Each credit equals approximately a one percent improvement in the home's efficiency.**
- **Performance and ERI compliance values were adjusted accordingly to allow maximum flexibility.**
- **Credit value based on climate zone.**
- **Larger Homes - Five additional credits must be earned for dwelling units more than 5000 sq ft**

ADDITIONAL EFFICIENCY REQUIREMENTS

Over 50 measures are available in these categories:

Heating Equipment
Cooling Equipment
Water Heating Equipment
Ducts in Conditioned Space
Reduced Air Leakage
ERV/HRV
Appliances
On-Site Renewable
Insulation
Fenestration

2024 IECC ADDITIONAL MEASURES (PARTIAL TABLE)

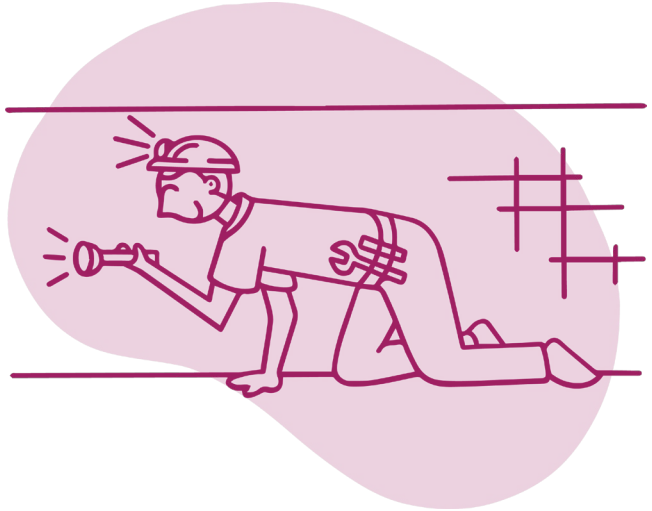
Measure Number	Measure Description	Credit Value	
		Climate Zone 5	Climate Zone 6
R408.2.1.1(1)	≥ 2.5% Reduction in total TC	1	1
R408.2.1.1(2)	≥ 5% Reduction in total TC	2	2
R408.2.1.1(3)	≥ 7.5% Reduction in total TC	2	3
R408.2.1.1(4)	≥ 10% Reduction in total TC	4	4
R408.2.1.1(5)	≥ 15% Reduction in total TC	5	6
R408.2.1.1(6)	≥ 20% Reduction in total TC	7	8
R408.2.1.1(7)	≥ 30% Reduction in total T	11	12

LIGHTING AND CONTROLS

- The lighting sections were revised editorially and provisionally for both interior and exterior.

- A new lighting power allowance table was added to match the equivalent requirements in IECC-C.

- Additional exceptions were added that may apply to Group R occupancies.



100% of permanently installed lighting must be high-efficacy

- Luminaires > 45 lumens per watts
- Lamps > 65 lumens per watt

Lighting control requirements expanded:

- Habitable spaces require manual dimmer or occupancy control {20 minutes) and manual control
- Specific locations such as Garages, unfinished basements, laundry rooms, utility rooms require occupancy control (20 minutes) and manual control

Other RESIDENTIAL SYSTEM CHANGES

Heat or Energy Recovery Ventilation

•Required in CZ 6

Electric Resistance Space Heating

•Limits CZ 4-8 to 2kW maximum unless at least one heat pump is installed

Controls

Additional controls required for exhaust fans in bathrooms:

•Timer

•Occupant Sensor Control

•Humidity Control

•Contaminant Control

Gas Fireplaces

•No continuous pilot

•On-demand pilot, intermittent ignition, or interrupted ignition,

•Efficiency requirements

Systems Outside Building Thermal Envelope

(Applicable to Wisconsin Climate)

- Heating outside a building must be radiant and have occupant sensors or a time switch.
- Snow melt and ice systems require automatic controls.
- Roof and gutter deicing systems are required to have automatic controls.
- Freeze protection system controls must include:
- Heat tracing of outdoor piping, heat exchanger, and automatic controls.

Existing Buildings Alterations/Substantial Improvements

EXISTING BUILDINGS

2024 IECC, existing building provisions focus on implementing efficiency upgrades when significant renovations or alterations occur to the building envelope, HVAC, and other building systems. In most renovation new equipment must meet current energy standards when replaced.

Five credits or points as outlined may be required contingent on the project scope.

When significant HVAC work is performed, testing and sealing of **existing** duct systems will be required.

Depending on the project scale, energy modeling may be used to demonstrate compliance with the code.

ALTERATIONS/SUBSTANTIAL IMPROVEMENTS

Alterations may require a minimum of three credits contingent on the project scope.

The 2024 IECC contains a new definition and trigger for Substantial Improvement**:**

Any *repair*, reconstruction, rehabilitation, *alteration*, *addition,* or other improvement of a *building* or structure, the cost of which equals or is more than 50 percent of the market value of the structure before the improvement.

RESIDENTIAL APPENDIXES

The 2024 IECC retains and updates the Solar Ready (Appendix NB) and Zero Net Energy Provisions (Appendix NC) appendices.

Ten new appendices and a resource chapter for All-Electric Residential Buildings.

Appendix RA – Reserved

Appendix RB - Solar-Ready Provisions

Appendix RC - Zero Net Energy Residential Building Provisions

Appendix RD - Electric Energy Storage Provisions

Appendix RE - Electric Vehicle Charging Infrastructure

Appendix RF - Alternate Building Thermal Envelope Insulation R-values

Appendix RG - 2024 IECC Stretch Code

Appendix RH - Operational Carbon Rating And Energy Reporting

Appendix RI - On-site Renewable Energy

Appendix RJ - Demand Responsive Controls

Appendix RK - Electric-Ready Residential Building Provisions

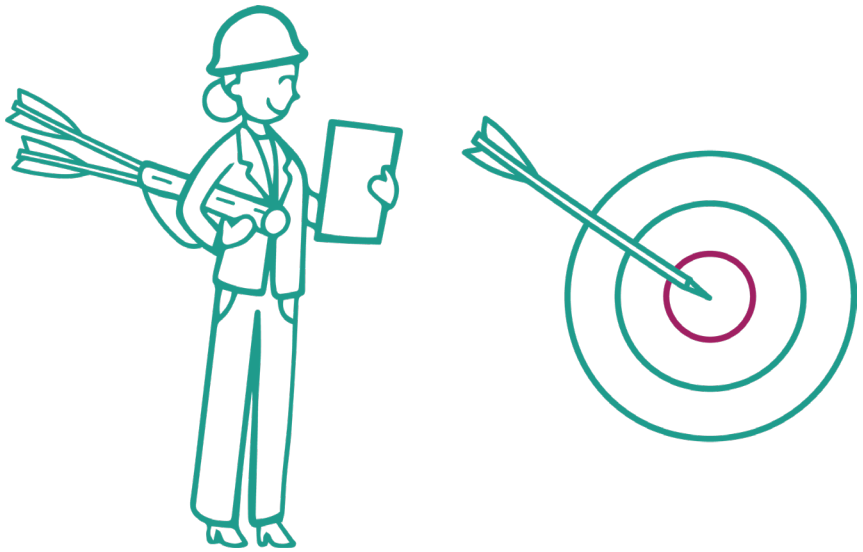
Appendix RL - Renewable Energy Infrastructure

Resource A - All-Electric Residential Buildings

2024 IECC for Wisconsin?

Rationale for 2024 IECC Adoption

- Increased Energy Efficiency (24% from current UDC)
- More Flexible Compliance Paths
- Updated Requirements and Provisions
- Potential to Address Emissions Reduction (Appendices)
- Federal IRA Funding (2021 Unamended)
- Homebuilder/Homebuyer Tax Credits (Minimum 2021 IECC)
- Wisconsin Leads
- Option to enact voluntary stretch code



Diagnostic Testing (workforce development initiative)

Loopholes (Equipment Tradeoffs, Duct Location, Ceiling Insulation Reduction, Wall Insulation Tradeoff)

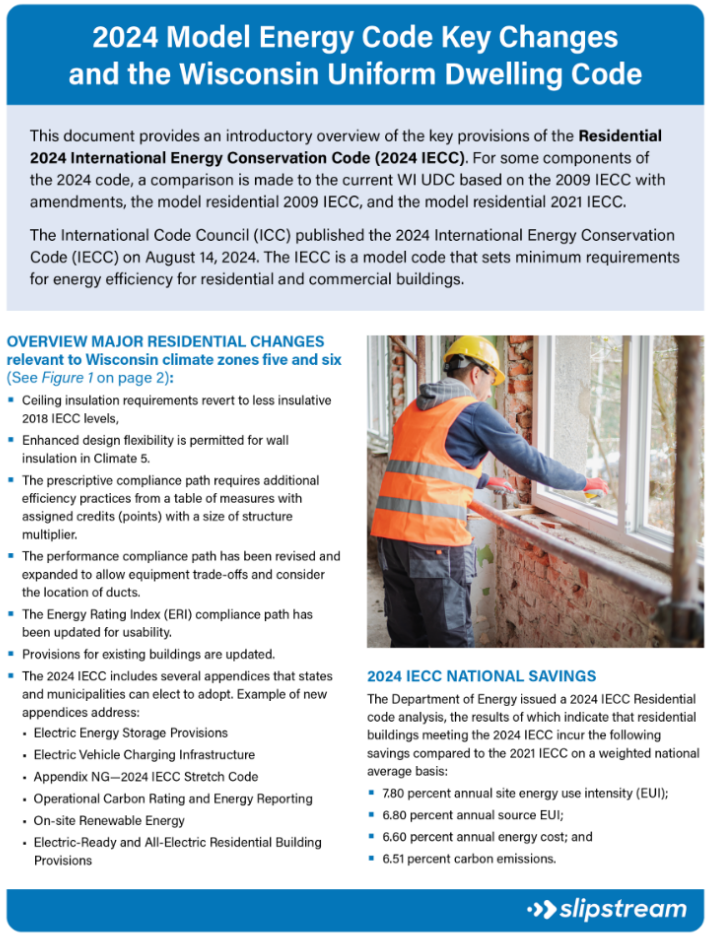
Wisconsin Resources

Wisconsin Code Resources

Factsheets/Resources:

- Wisconsin Rule-Making/Code Adoption Process
- Wisconsin Stakeholder Priorities and Preferences for Building Energy Code Adoption
- 2021 Model Energy Code Key Changes
- 2024 Model Energy Code Key Changes

All resources can be found at:
https://www.wienergycodes.org/resources/



2024 Model Energy Code Key Changes and the Wisconsin Uniform Dwelling Code

This document provides an introductory overview of the key provisions of the **Residential 2024 International Energy Conservation Code (2024 IECC)**. For some components of the 2024 code, a comparison is made to the current WI UDC based on the 2009 IECC with amendments, the model residential 2009 IECC, and the model residential 2021 IECC.

The International Code Council (ICC) published the 2024 International Energy Conservation Code (IECC) on August 14, 2024. The IECC is a model code that sets minimum requirements for energy efficiency for residential and commercial buildings.

OVERVIEW MAJOR RESIDENTIAL CHANGES relevant to Wisconsin climate zones five and six (See *Figure 1* on page 2):

- Ceiling insulation requirements revert to less insulative 2018 IECC levels,
- Enhanced design flexibility is permitted for wall insulation in Climate 5.
- The prescriptive compliance path requires additional efficiency practices from a table of measures with assigned credits (points) with a size of structure multiplier.
- The performance compliance path has been revised and expanded to allow equipment trade-offs and consider the location of ducts.
- The Energy Rating Index (ERI) compliance path has been updated for usability.
- Provisions for existing buildings are updated.
- The 2024 IECC includes several appendices that states and municipalities can elect to adopt. Example of new appendices address:
  - Electric Energy Storage Provisions
  - Electric Vehicle Charging Infrastructure
  - Appendix NG—2024 IECC Stretch Code
  - Operational Carbon Rating and Energy Reporting
  - On-site Renewable Energy
  - Electric-Ready and All-Electric Residential Building Provisions

2024 IECC NATIONAL SAVINGS

The Department of Energy issued a 2024 IECC Residential code analysis, the results of which indicate that residential buildings meeting the 2024 IECC incur the following savings compared to the 2021 IECC on a weighted national average basis:

- 7.80 percent annual site energy use intensity (EUI);
- 6.80 percent annual source EUI;
- 6.60 percent annual energy cost; and
- 6.51 percent carbon emissions.

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Thank You!

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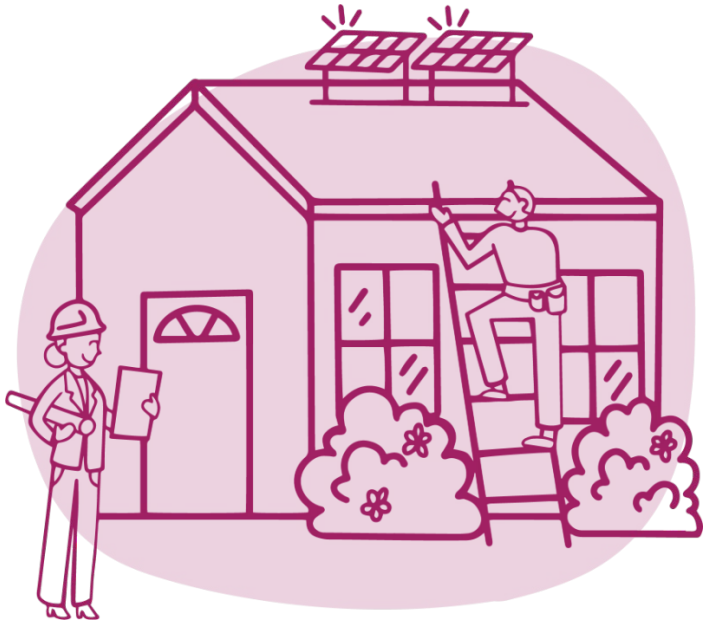

PROJECT PARTNERS Clean Wisconsin • Wisconsin Local Government Climate Coalition • Midwest Energy Efficiency Alliance • New Buildings Institute •