

2023 Q1

Codes, Standards and New Construction Quarterly Newsletter

WHAT'S NEW:

NEEA's Codes, Standards and New Construction team has had a fast start to 2023 and it's hard to believe that Q1 is over. Codes, Standards, and New Construction activities have been busier than ever, especially considering the federal funding opportunities for code advancement. This newsletter provides a high-level view of the activities NEEA staff are managing; feel free to connect if you have detailed questions or suggestions on ways we can be more effective in this area.

The funding opportunity announcement (FOA) due dates from the U.S. Department of Energy (U.S. DOE) constituted the big story in Q1 2023. Concept papers and applications were due in Q1 2023 for the first \$45 million (of \$225 million) of the codes portion of the Infrastructure Investment and Jobs Act (IIJA). NEEA staff are tracking several proposals that could provide funding for training, workforce development and tool development that would benefit the Northwest; decisions on these applications will occur in Q2 2023. The second FOA will be released in Q3 or Q4 2023. These funding opportunities will continue for the next three years. NEEA staff are also waiting for the first announcement of the \$1 billion of code funding from the Inflation Reduction Act to prepare for increased collaboration and coordination for net zero construction activities within our region.

Beyond the funding opportunities, NEEA staff have continued to participate in federal and state equipment standards, state and national code development, and training and education activities within each state. Each of these areas is described below.

Finally, NEEA's Market Research and Evaluation team is managing an evaluation of our codes program that will be available Q2 2023. The MRE team is also managing several code compliance studies, also described below.

In summary, we are a busy team involved in a lot of impactful work that will increase efficiency and comfort in the Northwest.

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For additional information on state codes and links to training resources, visit NEEA's website: <https://neea.org/our-work/codes-standards/codes>

Additional energy code training resources can be found on the BetterBuiltNW (BBNW) website: <https://betterbuiltinw.com/training#energy-code>



Questions about this newsletter may be addressed to:

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PUBLISH DATE: MAY 1, 2023

State	Sector	Code Version	Adopted Date	Effective Date
IDAHO	COMMERCIAL	IECC 2018	4/2/2020	1/1/2021
	RESIDENTIAL	IECC 2018 with amendments	4/2/2020	1/1/2021
MONTANA	COMMERCIAL	IECC 2021	6/6/2022	9/8/2022
	RESIDENTIAL	IECC 2021 with amendments	6/6/2022	9/8/2022
OREGON	COMMERCIAL	2021 Oregon Energy Efficiency Specialty Code (OEESC) (ASHRAE 90.1-2019)	4/1/2021	10/1/2021
	RESIDENTIAL	2021 Oregon Residential Specialty Code (ORSC) (IECC 2018 with amendments)	4/1/2021	10/1/2021
WASHINGTON	COMMERCIAL	2018 Washington State Energy Code — Commercial (WSEC-C) (IECC 2018 with amendments)	7/26/2019	2/1/2021
	RESIDENTIAL	2018 WSEC-R (IECC 2018 with amendments)	11/9/2019	2/1/2021



International Energy Conservation Code (IECC)

The 2024 IECC development process continued in Q1 2023. Q4 2022's public comment period for the first draft of the 2024 IECC led to the submittal of hundreds more code change proposals; the [Residential](#) and [Commercial](#) IECC committees (and their subcommittees) undertook most of the review of this second round of proposals in Q1 2023. Of the four proposals submitted by NEEA staff in this second round, one is on track for committee approval. For said proposal, NEEA staff coordinated with industry and achieved a compromise on one of NEEA's proposals that was not approved in the first round.

NEEA's influence in this process reaches beyond the code change proposals submitted; NEEA staff are voting members of the main Commercial code committee as well as the Residential and Commercial HVAC and Refrigeration (HVACR) and Water Heating subcommittees. NEEA staff have participated in all meetings of these committees and are closely monitoring several others.



Commercial Code

General Updates

The [2021 Washington State Energy Code — Commercial](#) (WSEC-C) is expected to go into effect July 1, 2023 and will significantly increase energy efficiency. In February 2023, a Pacific Northwest National Laboratory (PNNL) [analysis of the energy savings potential of the 2021 WSEC](#) found that the 2021 WSEC C is about 24% more efficient than the version it is replacing (2018 WSEC-C) and is cost-effective for all scenarios analyzed.

Education and Training

NEEA provides training and technical assistance on the current WSEC-C provisions. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

Educational resources and trainings about the current 2018 WSEC-C are available for on-demand viewing on NEEA's commercial [WSEC website](#).

The WSEC-C trainings delivered and offered in Q1 2023 are listed in the table below.

Training Topic	Course Length	Attendees	Location	Date
Name that HVAC System	7 hours	77	Washington Association of Building Officials (WABO) Annual Institute Conference, Lynnwood	3/22/2023
2021 WSEC-C – Key changes and tools to navigate them	7 hours	84	WABO Annual Institute Conference, Lynnwood	3/23/2023



Commercial Code (Continued)

Field Study and Evaluation

The WSEC-C field study focused on understanding how the 2015 commercial energy code affected commercial new construction across Washington state, with the goal of supporting the code development and implementation efforts of NEEA and its stakeholders by assessing which building systems are present, which compliance paths are being selected, and which code requirements are not typically being met. The project contractor completed all 76 site visits and analyzed the collected data in 2021; billing data was collected through mid-2022 from the subsample of 25 buildings for which 1) building contact turnover had not occurred and 2) all necessary information was provided to facilitate the collection of both natural gas and electric energy use data. The project contractor completed analysis of billing data in late 2021, and a Billing Data Analysis Addendum outlining findings from these final study activities has been appended to the [overall project report](#) on the NEEA website.



Commercial Code (Continued)

Code Compliance Webtool

As of Q1 2023, [the WSEC-C code compliance webtool](#) had more than 9,400 registered users and more than 13,000 non-test projects submitted through the tool.

The 2021 WSEC-C is expected to go into effect July 1, 2023. The project contractor continues to develop program updates and enhancements to the webtool to support a new 2021 WSEC-C edition of the webtool that will be launched in Q2 2023. A key enhancement is a new “additional energy efficiency and load management measures” accounting tool designed to help users navigate these expanded requirements in the 2021 WSEC-C.

NEEA staff initiated a project to exchange data between the Total System Performance Ratio ([TSPR](#)) compliance tool and the [Washington commercial compliance tool](#). This data exchange project will allow for reduced redundancies for users when the TSPR calculation is required for commercial building projects in Washington. In addition, the alliance provides support for technical assistance to end users and to update tools and fix bugs and issues that arise for both compliance tools.



Residential Code

General Updates

The [2021 Washington State Energy Code — Residential \(WSEC-R\) final draft](#) was posted in Q1 2023 after its approval by the State Building Code Council in Q4 2022. In February, a PNNL [analysis of the energy savings potential of the 2021 WSEC-R](#) found that the 2021 WSEC-R is about 30% more efficient than the version it is replacing (2018 WSEC-R) and is cost-effective on a total life-cycle cost basis. The 2021 WSEC R is expected to go into effect July 1, 2023.

Education and Training

NEEA provides training and technical assistance on the current WSEC-R provisions. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

WSEC-R on-demand trainings, training webinar schedule and additional resources can be found on the [Washington State University Energy Program's](#) website.



Residential Code (Continued) Education and Training *(Continued)*

WSEC-R trainings delivered and offered in Q1 2023 are listed in the table below.

Training Topic	Course Length	Attendees	Location	Date
Deeply Buried Ducts	1.5 hours	53	Live Webinar	1/17/2023
Residential Code Overview	1 hour	7	Live Webinar	2/21/2023
Cost effective HVAC strategies to meet new WSEC-R 2021	1 hour	438	Live Webinar	3/21/2023
Code Overview for Tri-Cities HBA	3 hours	45	Tri-Cities, WA	1/13/2023
Field Energy Code Inspection	8 hours	25	Richland, WA	1/20/2023
2021 WSEC-R Overview	8 hours	142	WABO Annual Institute Conference, Lynnwood	3/24/2023
2018 WSEC-R: Summary of 2018 WA State Residential Energy Code	10 mins	199*	On Demand	Various
2018 WSEC-R: Residential Energy Code Compliance	2 hours	5*	On Demand	Various
2018 WSEC-R: Build Tight & Ventilate Right Options (short version)	1 hour	35*	On Demand	Various
2018 WSEC-R: Balanced Ventilation with HRVs & ERVs	1.5 hours	3*	On Demand	Various
2018 WSEC-R: Balanced Ventilation with ERVs & HRVs (short version)	1 hour	11*	On Demand	Various
2018 WSEC-R: Efficient Building Envelope Options	1 hour	31*	On Demand	Various
2018 WSEC-R: Heating & Air Conditioning System Inside Options	14 mins	41*	On Demand	Various
Using the C3 Calculator to Calculate Ventilation Rates	10 mins	61*	On Demand	Various
Filling out the Compliance Certificate for Ventilation Systems	10 mins	42*	On Demand	Various

*On-Demand training attendance numbers are cumulative starting from January 1, 2023.



Residential Code (Continued)

Field Study and Evaluation

Washington State Energy Code – Residential Evaluation

NEEA contracted with TRC to gather market data about homes being built under the 2018 WSEC-R. This research has the following objectives:

- Calculate code compliance among single-family buildings constructed under the 2018 WSEC R.
- Determine the compliance pathways builders are taking to meet 2018 WSEC-R code requirements, with a focus on water heating and space heating equipment, renewables, and (where possible) air tightness levels achieved.
- Investigate whether homes built under 2018 WSEC-R include dual fuel systems (for example, homes with both electric and gas-fueled space heating options.)
- Investigate whether and how new construction homes use natural gas for end uses including stoves, dryers and hearths, and the prevalence of gas hookups in homes with all-electric appliances.

This project kicked off in Q2 2022, and a report is expected in Q2 2023.



Commercial Code

General Updates

A new version of the national model commercial energy code, ASHRAE Standard 90.1-2022, was published in January 2023. Given Oregon's recently [formalized process for adopting the most recent version of ASHRAE 90.1](#) as the energy provisions of its commercial energy code, the Oregon Energy Efficiency Specialty Code (OEESC), Oregon will begin its next OEESC update process no later than July 2023.

Residential Code

General Updates

In Q1 2023, the [Residential Code review committee](#) formed by the Oregon Building Codes Division (BCD) finished processing the public comments received last year on the first draft of the energy efficiency chapter of the 2023 Oregon Residential Specialty Code (ORSC). A representative of NEEA was selected to fill one of the nine seats on this committee. The committee's recommendations regarding the energy code were incorporated into the [2023 ORSC final draft](#), which was subsequently approved by the Oregon Residential and Manufactured Structures Board (RMSB) at its [March 8, 2023 meeting](#). Pending a public comment period and final approvals, [the 2023 ORSC is expected to go into effect October 1, 2023](#).

Education and Training

NEEA partners with organizations across the state to provide technical assistance and training on the current and upcoming Oregon residential and commercial energy codes. Training attendees include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.



General Updates

In Q1 2023, the Idaho Building Code Board and the Idaho Division of Occupational and Professional Licenses (DOPL) met to discuss Governor Brad Little's Zero-Based Regulation executive order, which will likely have an impact on the energy code in Idaho. In 2023, the Board, DOPL and stakeholders will continue to convene and participate in rulemaking meetings with the goal of voting on and approving an updated set of rules by the end of the year.

Education and Training

NEEA provides training and technical assistance on the current Idaho energy code. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

No live trainings were delivered in Q1 2023.

More information about the Idaho building energy code, trainings and resources can be found at [the Idaho Energy Code website](#).



Field Study and Evaluation

Idaho Residential Code Evaluation

NEEA is reviewing its assumptions underlying its estimation of energy savings resulting from NEEA's and its partners' involvement in the Idaho state code processes. Using data collected through permit review, site visits to residential new construction building sites, and interviews with market actors, this research will address the following objectives:

- 1) Assess statewide compliance with selected code requirements among single-family homes built under IECC 2018 with Idaho amendments
- 2) Develop estimates of statewide energy code compliance and compliance within urban and rural jurisdictions separately using data collected on individual code requirements
- 3) Provide statewide findings regarding primary space and water heating fuel and above-code elements using data collected on individual code requirements

This work will kick off in Q1 2023, and Idaho's residential energy code evaluation is expected in Q4 2023.

Idaho Commercial Code Evaluation

The Idaho Commercial New Construction Code (CNCC) evaluation study will assess the path(s) by which and the degree to which code compliance is achieved with the amended 2018 International Energy Conservation Code (IECC) in newly constructed buildings, while also measuring building energy performance compared with the average energy performance of buildings constructed under previous code. The results of the study will provide direction to the development and implementation efforts of the NEEA Codes team and will provide other regional code stakeholders guidance in targeting their energy efficiency work in the commercial new construction sector. An open RFP will be posted in May 2023 to solicit bids for this project; an award decision is targeted for June 2023, with project activities commencing shortly thereafter.



General Updates

The Montana Homes Collaborative group met in Q1 2023, discussing topics including wall assembly and building envelope best practices, cold climate foundations and more. The group has been working on a Montana Roadmap to Home Energy Efficiency and Affordability document that is expected to be published in 2023. The document will include recommendations of the Montana Homes Collaborative for building efficiently and affordably in cold climates like Climate Zone 6, where Montana is located.

The 18th Annual Montana Building Codes Education Conference took place in March 2023 in Missoula. The conference is intended for design professionals, code officials, residential and commercial builders and others; it provides education and training on a variety of building codes including structural, fire, commercial, residential and energy codes. NEEA staff attended the conference and NEEA contractors staffed a booth and distributed materials on the Montana version of the IECC and building and duct tightness testing.

Education and Training

Montana energy code training providers developed and posted a virtual course for building and duct tightness training and are continuing outreach efforts to encourage participation. The training can be found on [NCAT's website under the Residential Energy Services section](#).

The Montana energy code training delivered in Q1 2023 is listed in the table below

Training Topic	Length of Course	Attendees	Location	Date
Blower Door with Infrared Scan Training – Habitat for Humanity	4 hours	10	Whitefish, MT	3/9/2023



Field Study and Evaluation

Montana Commercial Code Evaluation

The Montana Commercial New Construction (MT CNC) evaluation field study focuses on assessing how and the extent to which code compliance is achieved with the 2018 IECC in newly constructed buildings in Montana. The study will include measurements of energy performance of these buildings as compared with the average energy performance of buildings constructed under previous code; the sampling frame will encompass all commercial buildings constructed in Montana under its version of the 2018 IECC, which was in effect from February 13, 2021, through June 5, 2022. NEEA's ultimate objective is to obtain results that will inform the development and implementation efforts of its Codes team, as well as to provide guidance for other regional stakeholders so that they can better target their energy efficiency work in the commercial new construction sector.

The contractor conducted a kickoff meeting in Q2 2022, and sample development is underway. In addition, data collection — focusing on review of permit data paired with visits to a subset of sites for data validation — is scheduled to commence in Q2 2023 and run through Q3 2023, with billing data collection scheduled for completion by Q1 2024. A preliminary report from this study is anticipated by Q4 2023, with an addendum reflecting billing data analysis results anticipated for Q1 2024.



Field Study and Evaluation (*Continued*)

Montana Residential Code Evaluation

NEEA is reviewing its assumptions underlying its estimation of energy savings resulting from NEEA's and its partners' involvement in the Montana state code processes. Using data collected through permit review, site visits to residential new construction building sites, and interviews with market actors, this research will address the following objectives:

- 1) Assess statewide compliance with selected code requirements among single-family homes built under IECC 2018 with Montana amendments.
- 2) Develop estimates of statewide energy code compliance and compliance within urban and rural jurisdictions separately using data collected on individual code requirements.
- 3) Provide statewide findings regarding primary space and water heating fuel and above-code elements using data collected on individual code requirements.

This work kicked off in Q1 2023, and Montana's residential energy code evaluation is expected in Q4 2023.



General Updates

In Q1 2023, the U.S. Department of Energy (DOE) issued Requests for Information (RFI) and Notices of Proposed Rulemaking (NOPR) for ten appliance and equipment standards.

NEEA staff continued to collect data and conduct analyses to submit comment letters for appliance products to the U.S. DOE in Q1 2023. Comments included regional sales data, lab testing results, field validation data and other technical data to support recommendations for enhanced test procedures and improved efficiency levels.

NEEA coordinated with the Appliance Standards Awareness Project (ASAP) and Bonneville Power Administration (BPA) to submit comments to the U.S. DOE on the Distribution Transformers energy conservation standards rulemaking. This is anticipated to be one of the largest and most important rulemakings of the year, with over 10 quads of full fuel cycle energy savings if the proposed energy levels are adopted.

Below is a list of products for which NEEA submitted comment letters in Q1 2023:

Commercial / Industrial Products

- Dedicated Purpose Pool Pumps
- Circulator Pumps
- Distribution Transformers

Lighting Products

- General Service Lamps

Residential Products

- Consumer Furnace Fans
- Portable Electric Spas
- Central Air Conditioners and Heat Pumps
- Uninterruptible Power Supplies

In addition to responding to comment letters, NEEA was active in a multi-party joint negotiation to move forward recommendations for a Department of Energy rulemaking on Commercial Unitary Air Conditioners and Heat Pumps (CUAC/HP). Following 2022's meetings addressing the test procedure, parties met with the Department of Energy for two in person working group sessions in Q1 to address updates to the energy conservation standard. Negotiations are expected to complete in Q2 2023. These meetings are working to develop a consensus agreement on the minimum efficiency level for these products, and involve the Department of Energy, energy efficiency advocates, utility representatives, and manufacturers.



General Updates

The CSA Group is ramping up its project work in 2023. NEEA staff participated in several committees and on their advisory committee to coordinate between the US and Canada on test method and standards development.



General Updates

Residential New Construction market activities focus on removing barriers to the adoption of above-code efficiency measures in new construction and collecting market evidence that supports future code advancement. To accelerate market adoption, activities influence builders and key subcontractors to adopt above-code technologies and best practices. The interventions focus on both gas and electric technologies and residential building measures.

Highlights of Q1 2023 include:

- Completion of more than 1,396 above-code home certifications year to date.
- Delivery of monthly newsletters to more than 2,600 recipients with a year-to-date 41.3% open rate and 8.7% click-through rate, both above goal for 2023.
 - The February newsletter included a feature article focused on code changes entitled [*What You Need to Know for 2023 Code Changes in the Northwest*](#). This code-focused article led to a noticeable uptick in newsletter readership with a 20.1% click-through rate.
- The BetterBuiltNW (BBNW) team completed an analysis to understand changes in 2021 WSEC and above-code home savings potential for Washington utilities participating in BBNW's Performance Path program. Potential for savings still exists for electric homes to go beyond code, but is more challenging for gas-heated homes.
- The BBNW team completed a market research analysis to better understand the potential to expand the BBNW audience to reach code builders, in addition to its current predominant audience of above-code builders.



Education and Training

The BBNW website offers several on-demand trainings and resources for builders on above-code building practices, including *Top 10 Best Practices for Today's Homebuilder* and topic-specific trainings about envelope and HVAC measures. These on-demand trainings can be [found on the BBNW Training website](#).



Education and Training *(Continued)*

Residential new construction above-code trainings delivered in Q1 2023 are listed in the table below.

Training Topic	Length of Course	Attendees	Location	Date
Top 10 Best Practices for Today's Homebuilder	3 hours	3*	On-demand	Various
Building with Ducts Inside Conditioned Spaces	3 hours	7*	On-demand	Various
Sustainable Homes Professional (SHP)	15–20 hours	8*	On-demand	Various
How to Cost Effectively Build Zero Energy Homes	3 hours	12*	On-demand	Various
On The Level: Balanced Ventilation Approaches for Healthy Indoor Air	1 hour	7*	On-demand	Various
On The Level: Exterior Air Barrier Details in the NW	1 hour	7*	On-demand	Various
On The Level: Installation Elements for ERVs & HRVs	1 hour	7*	On-demand	Various
On The Level: Design and Quality Control Best Practices for ERVs/HRVs	1 hour	4*	On-demand	Various
On The Level: Practical Solutions for Selecting & Installing Exterior Insulation	1 hour	12*	On-demand	Various
On The Level: Using Building Science to Inform Envelope Design	1 hour	9*	On-demand	Various
SHP Project Showcase	1.5 hours	36*	On-demand	Various
Zero Energy Homes: Updates & Cost-Effective Approaches	1 hour	30*	On-demand	Various
Simple Steps to Improve Ductwork Installations	1 hour	6*	On-demand	Various
Certified Passive House Project Tours	4.5 hours	31	Portland, OR	2/10/2023
Simple Steps to Improve Ductwork Installations	1 hour	65	Live webinar	2/24/2023
Advanced Heat Pump/HVAC Design	5 hours	35	Bend, OR	3/9/2023

*On-Demand training attendance numbers are cumulative starting from January 1, 2023.



Program Updates

Starting in 2023, NEEA discontinued direct market engagement in the manufactured homes market in the Northwest. NEEA staff are starting several projects to wrap up this program and to prepare it for long-term monitoring and tracking. These projects are operating under the updated U.S. DOE standard and ENERGY STAR® specification. At the end of Q1 2023, NEEA learned about several challenges to the U.S. DOE effective date; NEEA staff will review this information in Q2 2023 and determine whether additional investment is needed until the new standard goes into effect.

The Manufactured Housing Institute (MHI) filed a lawsuit in Q1 2023 against U.S. DOE's energy performance standards for manufactured housing. The lawsuit seeks a stay of the impending implementation of the U.S. DOE final rule. Following this lawsuit (but not necessarily due to it), U.S. DOE announced an indefinite delay in the effective date to address open issues related to enforcement of the standard. Because both U.S. DOE and the U.S. Department of Housing and Urban Development (HUD) have authority over manufactured housing, enforcement responsibilities are confusing. NEEA staff hope the effective date is reset soon, so that this important (25 years in the making) standard can take effect.

Actions around this standard are evolving, so don't hesitate to connect with NEEA if you have a question about what's happening.

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TOGETHER *We Are Transforming the Northwest*

