# ENERGY CODES 2023

May 2-4, 2023 | Chicago, IL

# 

# 2023 NATIONAL ENERGY CODES CONFERENCE

HOSTED BY U.S. DEPARTMENT OF ENERGY



Office of ENERGY EFFICIENCY & RENEWABLE ENERGY





# Thank you for attending

The 2023 national energy codes conference! We're very glad you could join us for another year of engaging topics, educational sessions, and solutionoriented dialogue.

The 2023 national energy codes conference **extends the deepest thanks to our organizers, speakers and attendees** for making this event possible.





# Hosted by:



Office of ENERGY EFFICIENCY & RENEWABLE ENERGY



#### A Less-Paper Event

In our efforts to conserve resources, we will not provide handouts of individual sessions. All presentations will be available at www.energycodes.gov after the event.

This program is made out of recycled materials.

# Welcome



REGISTRATION OPENS Wednesday, May 3 | 8:00 am Thursday, May 4 | 7:30 am

Registration desk is located outside the Empire Room.



### Wi Fi

Available in the hotel lobby and meeting rooms.



#### BREAKFAST

Please join us for breakfast in the Mezzanine.

Wednesday, May 3 | 8:00-9:00 am Thursday, May 4 | 7:30-8:30 am



## VISITORS GUIDE

# Chicago visitors information will be located at the Registration desk.

Additional information also available https://www.choosechicago.com/.



## WELCOME RECEPTION

Located in the Mezzanine. **Tuesday, May 2** | 5:30–6:30 pm



## HOTEL CONTACT

Palmer House a Hilton Hotel 17 E. Monroe St. Chicago, IL 60603 312-726-7500

# Keynote Speakers



**Wednesday, May 3** 9:30–10:00 am **EMPIRE** LOBBY LEVEL



Governor JB Pritzker was sworn in as the 43rd Governor of Illinois on Jan. 14, 2019. In 2021, Governor Pritzker proposed and signed a comprehensive clean energy bill, making Illinois a national leader on climate action and the first state in the Midwest to pass a law phasing out fossil fuels. Before becoming governor, Pritzker founded 1871, the non-profit small business incubator in Chicago. Since its creation, Chicago has been named one of the top ten technology startup hubs in the world, and 1871 was named the best incubator in the world.



**Jeff Marootian** | Senior Advisor for Energy Efficiency and Renewable Energy Office of the Secretary

Jeff Marootian is President Biden's nominee to serve as the Assistant Secretary for Energy Efficiency and Renewable Energy at the United States Department of Energy. He is currently a Senior Advisor to Energy Secretary Jennifer Granholm. He previously served as a Special Assistant to the President in the White House and was a member of the Biden-Harris Transition Team. Prior to joining the Biden-Harris Administration, Jeff was the Director of the District Department of Transportation, where he piloted sustainable transportation technologies and led the city's early adoption of the Transportation and Climate Initiative.



**Ram Narayanamurthy** | Deputy Director, Building Technologies Office U.S. Department of Energy

Ram Narayanamurthy is the Deputy Director of the Building Technologies Office. In this role, he oversees BTO's range of activities supporting advancements in building energy efficiency and decarbonization, including research & development (R&D), market stimulation and deployment, and building codes. Ram has more than two decades of experience supporting the development and deployment of building technologies. Prior to joining DOE, he led the buildings program at the Electric Power Research Institute (EPRI), where his team focused on strategies for decarbonization of the building stock in both existing and new construction.

# Plenary Speakers



### Day 1 | Wednesday, May 3 10:30–11:30 am EMPIRE

New Federal Funding and Assistance Opportunities for Building Energy Codes



Jeremy Williams U.S. Department of Energy



**Chris Perry** U.S. Department of Energy



Harry Bergmann U.S. Department of Energy

### Day 2 | Thursday, May 4 8:30–9:30 am EMPIRE

# The Next Decade: The Role of Energy Codes in Supporting State and Local Goals



Will Vicent California Energy Commission



Ashley Runyon Kentucky Office of Energy Policy



**Angela Tovar** Chicago Office of Climate and Environmental Equity



# Energy Codes Bootcamp

A crash course in energy codes designed for attendees who are new to the world of building energy codes. This workshop will cover a sampling of energy code basics, including a primer on the model codes, the International Energy Conservation Code (IECC) and ANSI/ASHRAE/IES Standard 90.1 and an introductory lesson on the REScheck and COMcheck software.



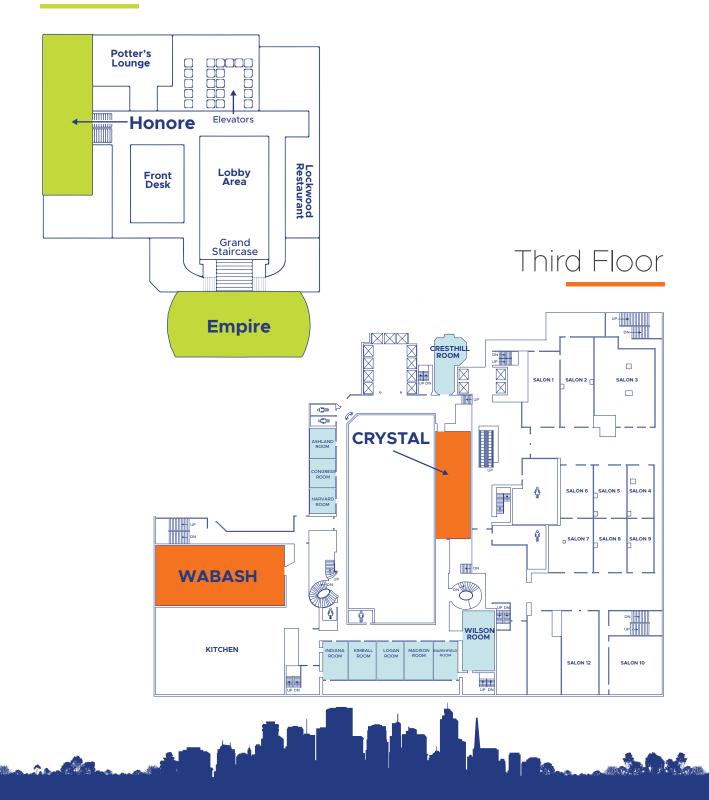


TIME	ΤΟΡΙϹ
1:00–5:00 pm	Energy Codes 101   REScheck Basics   COMcheck Basics Crystal (3rd Floor)
1:00-4:00 pm	Kinexx Tour Clark 5 (7th Floor)
5:30-6:30 pm	Welcome Reception Mezzanine

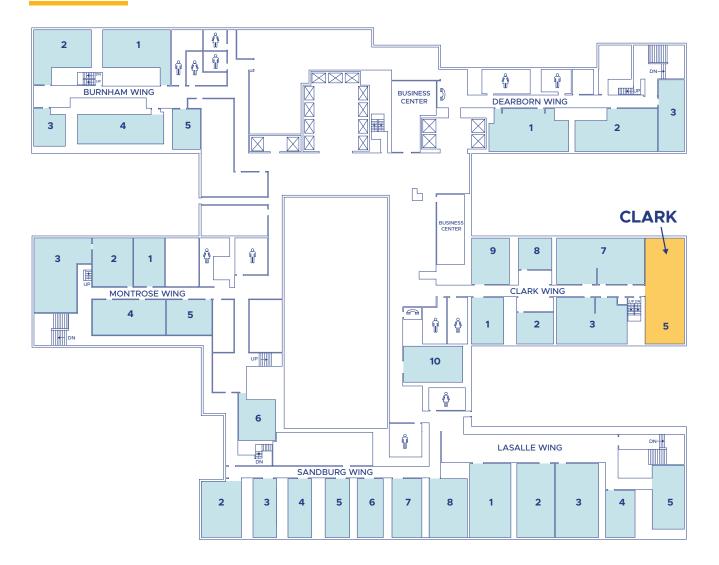


# **Conference Floors Plans**

# Lobby



# Seventh Floor (pre-conference day only)



# Day 1 Wednesday, May 3

LOBBY LEVEL

ТІМЕ	ΤΟΡΙϹ					
8:00-9:00 am	Registration is outside Empire and Breakfast is in the Mezzanine					
9:00–9:30 am	Welcome and Opening Remarks EMPIRE LOBBY LEVEL					
9:30–10:00 am	<b>Keynotes:</b> Governor JB Pritzker, Illinois (Pre-recorded), Jeff Marootian, Senior Advisor for Energy Efficiency and Renewable Energy Office of the Secretary, and Ram Narayanamurthy, Deputy Director, Building Technologies Office, U.S. DOE EMPIRE LOBBY LEVEL					
10:00–10:30 am	Break					
10:30–11:30 pm	New Federal Funding and Assistance Opportunities for Building Energy Codes EMPIRE LOBBY LEVEL					
11:30– 1:00 pm	Networking Lunch and Awards EMPIRE LOBBY LEVEL					
1:00–2:30 pm	Decarbonizing Energy Codes: Weighing Effectiveness, Adoptability, and Enforceability HONORE	Navigating DOE Energy Code Funding: Past, Present, and Future Opportunities WABASH	(Discussion) BPS and Codes: Making Sure the Left Hand Knows What the Right Hand is Doing CRYSTAL			
2:30-3:00 pm	Break					
3:00-3:30 pm	Lightning Round – Where Are Energy Codes Going by 2035? EMPIRE LOBBY LEVEL					
3:30-5:00 pm	What's the Latest in the IECC and 90.1 Model Code Development Cycles?	What States and Cities Ought to Know About Macro Trends Impacting Multifamily Properties WABASH	(Discussion) Building Up the Workforce: Strategies to Reach Students and Working Professionals <sub>CRYSTAL</sub>			



## Jeffrey A. Johnson Award

**The Jeffrey A. Johnson award** recognizes outstanding accomplishments surrounding building energy codes, and is presented annually at the National Energy Codes Conference.



The award recognizes a leader or a team in U.S. states and territories for sustained service of the highest caliber in the pursuit of energy- efficiency goals. The award recipient exemplifies Jeff's enthusiasm, his motivation and drive for innovation, and his can-do, no-fear attitude for making a difference. Join us at lunch on Wednesday as we announce the 2023 winner. Day 1 continued

# **Featured Speakers**

#### EMPIRE

## (Plenary) New Federal Funding and Assistance Opportunities for Building Energy Codes

What types of activities can help achieve the most energy and emission savings from energy codes?

With an unprecedented \$1.225 billion in funding between the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) to support energy codes, States and local governments will have options. From adopting advanced energy codes, to developing software tools to improve compliance, to implementing workforce programs in disadvantaged communities - available funding can help meet these critical needs. This plenary session will provide an overview and update on the funding opportunities through BIL and IRA, and describe how this funding can be leveraged to support the advancement of building energy codes throughout the country

**Speakers:** Harry Bergmann, Chris Perry, Jeremy Williams

#### HONORE

## **Decarbonizing Energy Codes:** Weighing Effectiveness, Adoptability, and Enforceability

ASHRAE has committed to a net-zero-carbon Standard 90.1 by 2031, ICC has incorporated zero energy codes and an Energy and Carbon Advisory Council charting its course, states and jurisdictions across the country are working to decarbonize their energy codes, and Inflation Reduction Act funding for zero energy codes is coming this year. With the vast majority of states and jurisdictions relying on the national model energy codes, how will we ensure the push to decarbonize codes is effective for local, state and national actors? How are individual states and jurisdictions looking at the path to decarbonizing their energy codes while working to effectively implement those they already have on the books?

This session will look at these questions from different perspectives and start the conversation about where we all go from here.

Moderator: Mike Waite Speakers: Adam Berry, Mike Waite, Cornelia Wu



#### Day 1 Wednesday, May 3 (Continued)

#### WABASH

## Navigating DOE Energy Code Funding: Past, Present, and Future Opportunities

With the passage of the Bipartisan Infrastructure Law and Inflation Reduction Act. DOE has unprecedented levels of funding to support energy code implementation and technical assistance. Historically, the Building Energy Codes Program has advanced energy code implementation efforts by funding activities such as market research, emerging energy code topics, and innovative training programs through Funding Opportunity Announcements (FOAs). In this session, we will explore some examples of current projects and highlight how stakeholders can navigate future funding and be part of the energy code technical assistance solution.

Moderator: Ian Blanding Speakers: Chris Burgess, Diana Burk, Joe Nebbia, Christina Volpi

#### CRYSTAL

## (Discussion) **BPS and Codes:** Making Sure the Left Hand Knows What the Right Hand is Doing

Building Energy Codes and Building Performance Standards (BPS) may seem distinct at first glance. But beneath the surface, there are important overlaps between BPS and energy codes, and coordinating the two policies should be a key priority for jurisdictions. As jurisdictions increasingly design, adopt, and implement BPS, policymakers and implementing entities are beginning to develop best practices and learn from early adopters about how to align and coordinate their BPS and building energy codes. Session attendees will hear from experts and practitioners in this space, as well as participate in discussion around this nascent policy coordination effort.

Moderators: Amy Boyce, Kim Cheslak Speakers: Emily Hoffman, Duane Jonlin

## HONORE What's the Latest in the IECC and 90.1 Model Code Development Cycles?

The model energy codes are important tools to help achieve national, state, and local energy and emission reduction goals. DOE analysis shows national model building energy codes are projected to save \$138 billion in energy cost savings, 900 MMT of avoided CO<sub>2</sub> emissions, and 13.5 quads of primary energy from 2010 through 2040. Join this session to learn about the latest in the world of model code development. ASHRAE 90.1 recently released its 2022 standard and is now looking ahead to 2025. IECC is well into its 2024 development cycle, for the first time using a standards-based process, and expects to publish this year. This session aims to give attendees an overview of what to expect in the latest versions of the codes and a glimpse of what is likely on the horizon.

Moderator: Gayathri Vijayakumar Speakers: Richard Lord, Michael Tillou, Gayathri Vijayakumar Day 1 Wednesday, May 3 (Continued)

#### WABASH

## What States and Cities Ought to Know About Macro Trends Impacting Multifamily Properties

Multifamily buildings comprise between 40 and 50% of new residential construction across the US, and data suggests these trends will persist. This session will highlight multifamily buildings trends – both market rate and affordable housing - that impact new construction and the built environment. The session will examine the landscape for multifamily buildings with common issues like air leakage, ventilation (indoor air quality), as well as new trends such as all electric buildings. Speakers will also discuss new tools that can help support multifamily owners and developers that support construction or upgrades to buildings in municipalities with strong climate policies. This panel will also consider the variety of adoption and compliance issues that impact the multifamily sector and how new codes and electrification support the affordable multifamily sector.

#### Moderator: Cherylyn Kelley Speakers: Karla Butterfield, Rob Foley, Todd Nedwick

CRYSTAL

## (Discussion) **Building Up the Workforce:** Strategies to Reach Students and Working Professionals

A robust and educated workforce is essential to achieving compliance with energy codes and preparing for future technologies, practices, and requirements. As many knowledgeable building professionals retire, it is increasingly important to invest in the future workforce. This panel will explore diverse techniques to educate professionals and expand the workforce by bringing new workers into the building industry, particularly through engaging high school and college students.

**Moderator:** Sarina Sawyer **Speakers:** Bob Clark, Robert Hattier, Sanyo Kapur, Shaunna Mozingo



# Day 2 Thursday, May 4 📖

LOBBY LEVEL

TIME	ΤΟΡΙϹ				
7:30–8:30 am	Registration is outside Empire and Breakfast is in the Mezzanine				
8:30–9:30 am	The Next Decade: The Role of Energy Codes in Supporting State and Local Goals EMPIRE LOBBY LEVEL				
9:30-10:00 am	Break				
10:00–11:30 am	Building Performance Standards: Adoption, Implementation, and Lessons Learned	Lessons Lea Electrificatio Codes	n Stretch	(Discussion) The Suite Life: Benefits and Challenges of Adopting All Codes	
	HONORE		WABASH	CRYSTAL	
11:30–12:30 pm	Networking Lunch MEZZANINE LOBBY LEVEL				
12:30–2:00 pm	How Valuing Resilience Demonstrates Energy Codes Benefits for Grid Stability and Life Safety	Saving Water and Saving Energy in Growing Communities		(Discussion) Leveraging Relationships to Encourage Program Buy-In and Improve Code Compliance	
	HONORE		WABASH	CRYSTAL	
2:00-2:30 pm	Break				
2:30–4:00 pm	<b>Embodied Carbon:</b> Taking a Lifecycle Approach to Codes		Performance Based Compliance: From Modeling to Quality		
		HONORE	Assurance	WABASH	



#### Day 2 Thursday, May 4 (Continued)

## Featured Speakers

#### EMPIRE

## (Plenary) **The Next Decade:** The Role of Energy Codes in Supporting State and Local Goals

States and cities across the country are grappling with climate change and looking for solutions that help mitigate their contribution to the crisis and adapt to the effects of a changing climate. Governments have drafted climate and resilience plans, set ambitious emissions reduction goals, and passed laws to regulate emissions and incentivize technologies and practices that support a cleaner economy. Although not always in the headlines, building energy codes, building performance standards, and complementary building policies are essential to meet these ambitious goals. In this moderated discussion, representatives from states and cities around the country will discuss how these impactful building policies fit in their larger plans to save energy, reduce emissions, and enhance building resilience in the coming decade.

Moderator: Alison Lindburg Speakers: Ashley Runyon, Will Vicent, Angela Tovar

HONORE Building Performance Standards: Adoption, Implementation, and Lessons Learned

Building Performance Standards (BPS) are exciting, outcome-based policies moving the needle on energy performance in existing buildings. Every day, new jurisdictions across the United States are exploring and designing BPS to meet the energy and emissions reduction needs of their existing building stock. As with any new policy movement, questions arise around policy design and implementation specifics. Come learn about BPS best practices, available federal resources, and collaboration-based approaches that allow everyone to achieve their energy and emissions goals.

Moderator: Joshua Kace Speakers: Gina Bocra, Gavin Bowman, Joshua Kace, Jessica Price

WABASH

## Lessons Learned with Electrification Stretch Codes

One of the ways some cities and states are working to reduce the environmental impact of their building stock is through the development, adoption, and implementation of all-electric codes aimed at building decarbonizing. This session will review the current landscape for all-electric codes. Speakers will discuss how these codes are being developed and advanced, as well as lessons learned from boots-on-the-ground experience adopting and implementing all-electric codes. This session will seek to answer questions such as, "What are best practices when implementing all-electric codes?," "How are all-electric codes expected to impact the grid?", "What other codes or programs can help support the transition to these codes?," and more.

Moderators: Diana Burk, Emily Hoffman Speakers: Courtney Anderson, Kelly Cunningham, Amy Rider

#### Day 2 Thursday, May 4 (Continued)

## (Discussion) **The Suite Life:** Benefits and Challenges of Adopting All Codes

With the launch of the National Initiative to Advance Building Codes, the White House committed funding and direct technical assistance to support state, local, and tribal governments in updating to the latest building codes and standards. Although codes are developed as a suite - offering a comprehensive community building standard to improve energy efficiency and make buildings more resilient to extreme weather events - they are often adopted in an ad hoc fashion, with some codes, such as the energy code, not being adopted at all. This session will highlight the many benefits of adopting the full suite of codes and provide guidance on how communities can leverage federal funding to adopt and maximize the benefits of all codes.

#### Moderator: Jim Meyers Speakers: Adam Berry, Shaunna Mozingo, Chris Perry

#### HONORE

## How Valuing Resilience Demonstrates Energy Codes Benefits for Grid Stability and Life Safety

As extreme weather events become more frequent and more intense, the necessity for implementing modern building codes is becoming increasingly apparent. To date, energy codes have primarily focused on reducing energy costs, energy use, and emissions. However, as climate adaptation becomes a priority, energy codes are also being recognized for their contributions to resilience. This session will explore the benefits of energy efficiency, from enhanced passive survivability for occupants to human health, and more resilient energy systems. Presenters will discuss the role of energy codes in reducing energy burdens and enhancing economic resilience, distributed energy resource technologies promoting enhanced grid resilience, and how communities are accessing federal energy code funding to reduce vulnerabilities to extreme heat.

Moderator: Joe Sollod Speakers: Ellen Franconi, Patricia Gomez, Kristen Hagerty

### WABASH Saving Water and Saving Energy in Growing Communities

Across the United States, there is increasing focus on the need to use water efficiently, especially in some of the fastest growing regions of the U.S., many of which are experiencing long and/or severe droughts. In addition, water heating is one of the largest end uses of energy in residential and multifamily buildings, so efficient use of water has the additional benefit of saving energy. This session will examine how building energy codes, plumbing codes, and voluntary programs support efficient use of water.

Moderator: Lauren Urbanek Speakers: Dan Cole, Gary Klein, Jonah Schein

#### Day 2 Thursday, May 4 (Continued)

#### CRYSTAL

## (Discussion) Leveraging Relationships to Encourage Program Buy-In and Improve Code Compliance

When we work together, we see the best results. Whether in a large community or one-on-one setting, forming relationships and establishing trust are necessary to ensure the success of a program. The panel will discuss examples of how to build and maintain these relationships and explore the myriad ways these partnerships can be leveraged, including through energy codes collaboratives, circuit riders, and utility engagement. Through a coordinated approach, we can share best practices, avoid common pitfalls, streamline compliance and implementation processes, and ultimately ensure the range of energy codes stakeholders are represented and benefit from the latest codes.

Moderator: Corie Anderson Speakers: Mekha Abraham, Matt Belcher, Jackie Dadakis, Tess Studley

#### HONORE

# **Embodied Carbon:** Taking a Lifecycle Approach to Codes

With the increased interest in quantifying the greenhouse gas emissions associated with a building, there is a push to not only consider operational emissions but also emissions from producing building materials, and the construction and decommissioning of each building. This session will provide an overview of some of the ongoing work to try to quantify the full lifecycle of emissions associated with a building, and discuss how this could be addressed by future building codes.

#### Moderator: Maggie Kelley Riggins Speakers: Alexandre Bigonesse, Mike Waite

## WABASH Performance Based Compliance: From Modeling to Quality Assurance

With the increased push toward decarbonizing the building stock, including net-zero new construction and Building Performance Standards for existing buildings, performance-based codes are receiving more attention. This session will provide an overview of performance-based residential and commercial energy codes, discuss the drivers leading to their expanded uptake, the challenges associated with that uptake, and some of the quality assurance processes being put in place to assure desired outcomes are met.

Moderator: Kim Cheslak Speakers: Maria Karpman, Ryan Meres, Michael Tillou

# THANK YOU to our moderators and speakers!

Bios are available at www.energycodes.gov/2023-national-energy-codes-conference						
TOPIC	MODERATOR	SPEAKERS				
New Federal Funding and Assistance Opportunities for Building Energy Codes	Chris Perry	Harry Bergmann, Chris Perry, Jeremy Williams				
<b>Decarbonizing Energy Codes:</b> Weighing Effectiveness, Adoptability, and Enforceability	Mike Waite	Mike Waite, Adam Berry, Cornelia Wu				
Navigating DOE Energy Code Funding: Past, Present, and Future Opportunities	lan Blanding	Chris Burgess, Diana Burk, Joe Nebbia, Christina Volpi				
(Discussion) <b>BPS and Codes:</b> Making Sure the Left Hand Knows What the Right Hand is Doing	Amy Boyce, Kim Cheslak	Discussion Session				
What's the Latest in the IECC and 90.1 Model Code Development Cycles?	Gayathri Vijayakumar	Richard Lord, Michae Tillou, Gayathri Vijayakumar				
What States and Cities Ought to Know About Macro Trends Impacting Multifamily Properties	Cherylyn Kelley	Karla Butterfield, Rob Foley, Todd Nedwick				
(Discussion) <b>Building Up the Workforce:</b> Strategies to Reach Students and Working Professionals	Sarina Sawyer	Discussion Session				
The Next Decade: The Role of Energy Codes in Supporting State and Local Goals	Alison Lindburg	Ashley Runyon, Angela Tovar, Will Vicent				
Building Performance Standards: Adoption, Implementation, and Lessons Learned	Gina Bocra, Gavin Joshua Kace Bowman, Joshua Kace, Jessica Price					
(Discussion) Lessons Learned with Electrification Stretch Codes	Diana Burk, Emily Hoffman	Discussion Session				
The Suite Life: Benefits and Challenges of Adopting all Codes	Jim Meyers	Adam Berry, Shaunna Mozingo, Chris Perry				
How Valuing Resilience Demonstrates Energy Codes Benefits for Grid Stability and Life Safety	Joseph Sollod	Ellen Franconi, Patricia Gomez, Kristen Hagerty				
Saving Water and Saving Energy in Growing Communities	Lauren Urbanek	Dan Cole, Gary Klein, Jonah Schein				
(Discussion) Leveraging Relationships to Encourage Program Buy-In and Improve Code Compliance	Corie Anderson	Discussion Session				
<b>Embodied Carbon:</b> Taking a Lifecycle Approach to Codes	Maggie Kelley Riggins	Alexandre Bigonesse Mike Waite				
Performance Based Compliance: From Modeling to Quality Assurance	Kim Cheslak	Maria Karpman, Ryan Meres, Michael Tillou				

# Thank you for attending the 2023 NATIONAL ENERGY CODES CONFERENCE

HOSTED BY:

U.S. DEPARTMENT OF

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY



**Continuing Education:** Continuing education options are provided for members of the American Institute of Architects (AIA) and International Code Council (ICC). The DOE Building Energy Codes Program is an AIA and ICC Continuing Education provider, with credits available for most conference sessions. RESNET CEUs will be offered also. Pick up forms at the conference Registration desk.







# ENERGY CODES 2023







For more information: www.energycodes.gov