Nevada Energy Code Collaborative meeting October 6, 2021 1:00 PM ~~ 2:30 PM (PDT)

Join Zoom Meeting

https://zoom.us/j/93499778245?pwd=L0h5Ky9wM2YrMzJiZXBXTDQ4SW5IQT09

Teleconference call-in number: (669) 900-6833 Meeting ID: 934 9977 8245 Passcode: 627136

- 1. Welcome, introductions, review agenda (5 minutes)
- 2. Energy Code Track in 2023 (~15 minutes)

Les Lazareck, Home Energy Connections

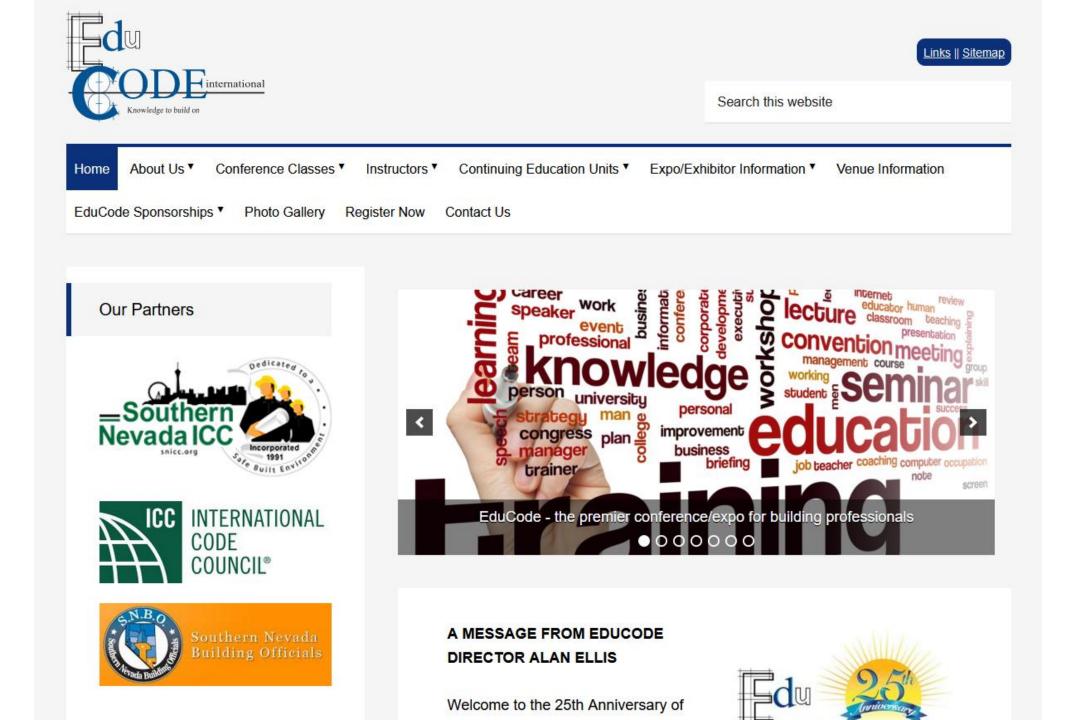
- The 2022 EduCode is a few months away and all sessions are set. We have the
 opportunity to support a full week energy code/standards track for 2023 EduCode.
- 3. 2024 IECC Proposal Submittal (~10 min)

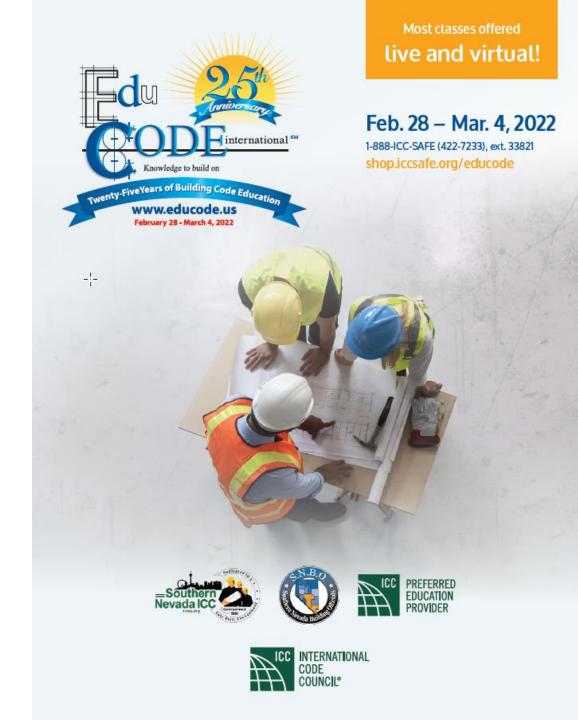
Robin Yochum, GOE, Vice Chair 2024 IECC Residential Committee

- Code proposals are due by end of day October 12.
- 4. EV Energy Use (~15 minutes)

Group Disgussion

- How does energy consumption of EVs in buildings impact energy models? Utility demands? Design constraints? Codes and standards? Renewables?
- 5. Energy Code Circuit Rider (~15 minutes)





EV Energy Use



Integrating Electric Vehicle Charging Infrastructure into Commercial Buildings and Mixed-Use Communities: Design, Modeling, and Control Optimization Opportunities

Prepri

Shanti Pless, Amy Allen, Lissa Myers, David Goldwasser, Andrew Meintz, Ben Polly, and Stephen Frank

National Renewable Energy Laboratory

Presented at the 2020 ACEEE Summer Study on Energy Efficiency in Buildings August 17-21, 2020

NREL is a national baboratory of the U.S. Department of Energy Office of Energy Efficiency & Renewable Energy Operated by the Alliance for Sustainable Energy, LLC This report is available at no cost from the National Renewable Energy Laboratory (NREL) at www.rest.gov/publications.

Contract No. DE-AC36-08GO28308

Building Energy Models and EV Charging Loads

The U.S. Department of Energy (DOE) Zero Energy Building and Campuses Common Definition, as well as the U.S. Green Building Council's LEED Zero Building certification program, provide specific guidance for how to treat EV charging loads in the zero energy building accounting (DOE 2015):

Zero Energy Building (ZEB) energy accounting would include energy used for heating, cooling, ventilation, domestic hot water (DHW), indoor and outdoor lighting, plug loads, process energy, and transportation within the building. Vehicle charging energy for transportation inside the building would be included in the energy accounting. On-site renewable energy may be exported through transmission means other than the electricity grid such as charging of electric vehicles used outside the building.

https://www.nrel.gov/docs/fy20osti/77438.pdf

EV Energy Use

 For a building or district that provides electricity to charge EVs used for transportation to and from the district, this load, if separately metered, is considered an export option rather than an additional load to offset with renewable energy. However, the interaction with the local electrical distribution system as well as the impacts on building's peak demand or time-of-use rate costs also need to be considered. As such, there is increasing interest in gridinteractive efficient buildings and the role that building demand flexibility can play in providing value to building owners while also providing benefits to the grid, such as enhanced resilience, deferring capital expenditures, and supporting the balance of renewable energy generation supply (DOE 2020).

2018 IECC

SECTION C407 TOTAL BUILDING PERFORMANCE

C407.1 Scope. This section establishes criteria for compliance using total building performance. The following systems and loads shall be included in determining the total building performance: heating systems, cooling systems, service water heating, fan systems, lighting power, receptacle loads and process loads.

Exception: Energy used to recharge or refuel vehicles that are used for on-road and off-site transportation purposes.

C407.2 Mandatory requirements. Compliance with this section requires compliance with Sections C402.5, C403.2, C403.3 through C403.3.2 C403.4 through C403.4.2.3

R406.3 Energy Rating Index. The Energy Rating Index (ERI) shall be determined in accordance with RESNET/ICC 301 except for buildings covered by the *International Residential Code*, the ERI Reference Design Ventilation rate shall be in accordance with Equation 4-1.

Ventilation rate, CFM = $(0.01 \times \text{total square foot area of house}) + [7.5 \times (\text{number of bedrooms} + 1)]$

(Equation 4-1)

Energy used to recharge or refuel a vehicle used for transportation on roads that are not on the building site shall not be included in the *ERI reference design* or the *rated design*.

5. Energy Code Circuit Rider (~15 minutes)

Shaunna Mozingo, MCG, Jim Meyers, SWEEP

- What it is, it's coming to Nevada, how it will be useful for building officials, builders, Architects, Raters
- 6. Federal Infrastructure Bill (~15 minutes)

Robin Yochum, GOE

- The infrastructure bill has funding opportunities for energy codes and standards, workforce development, training, climate initiatives and much more.
- 7. DOE Residential field study update (~5 min) NASEO (TBA)
 - Update on the field study and when the training phase will start in Nevada.
- 8. Wrap Up & Next Steps (5 minutes)
 - Closing comments
 - Next meeting date (3 months appx January 2022)

Nevada Circuit Rider

2021 QUARTERLY NEVADA ENERGY CODE COLLABORATIVE MEETING

What is a Circuit Rider?

- Energy code circuit riders are direct experts that meet with targeted groups of market actors to address specific code compliance and enforcement needs. (Note – prior to the pandemic these programs provided extensive in-field support.
- Started in the Northwest
- Support across state
- Audience focused support, tailored technical assistance to unique concerns
- Support building departments, builders, designers, trades

Teaching approach

- Traditionally offered in locations
- Today online offerings
- Typically slides/PowerPoint presentations
- Usually covers the entirety of the code
 - Or updates/changes from the previous code
- ► High-level
- Information limitations

Teaching approach

One-on-one

- One-on-few
- Detailed training/support
- Ongoing outreach to 'instructor'
- Comprehensive approach

Circuit Rider



About

ENERGY CODE COLLABORATIVE IDAHO ENERGY CODE CIRCUIT RIDER The Idaho Energy Code Circuit Rider program is dedicated to educating citizens and stakeholders on the practical value of energy codes.

Dave Freelove, Idaho's current Energy Code Circuit Rider, is a key resource for Idaho energy code questions, code interpretations, and enforcement strategies. He assists local jurisdictions, permitting departments, building officials, and design and construction professionals by providing energy code assistance through:

- Technical support via email and telephone
- On-site education, training, and technical assistance for Idaho code jurisdictions and other industry professionals, and
- Consistent code interpretations, installations, and enforcement techniques.

All services are offered free of charge.

For energy code questions, assistance, or to request training, Mr. Freelove can be contacted by email at energy@idabo.org or by phone at 208-880-7589. Questions may also be directed to the IDABO office at 208-321-9182 or through tottens@amsidaho.com.



Circuit Rider

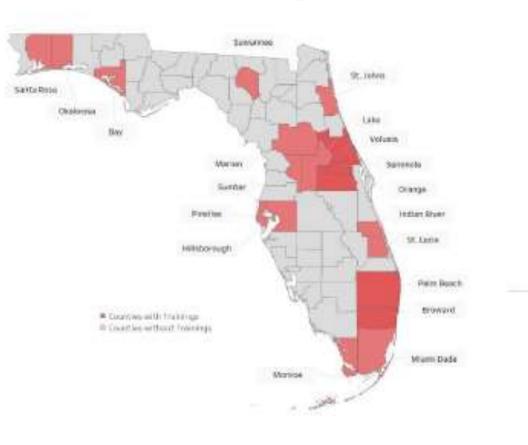
Florida observations



Circuit Rider

Florida observations

Florida Counties with Circuit Rider Trainings since 2015



Next Steps - Circuit Rider

- Email to be set up
- Outreach plan to building industry across state
- Communication tools
 - What is best for Nevada

Questions?

2024 IECC Proposal Submittal

https://vimeo.com/manage/videos/606706558





People Helping People Build a Safer World' Welcome to cdpACCESSTM

Empowered Participation

cdpACCESS[™] is the International Code Council's new cloud-based system for the code development process (cdp). Log in with your My ICC username and password to collaborate, review, submit and vote (if eligible) on code change proposals and public comments.

How cdpACCESS[™] works

Collaborate

cdpACCESS[™] allows you to create code change proposals and public comments and store them in the cloud for easy access and submission. You can also invite colleagues to

Vote

It is easy to review hearing testimony and vote on code change proposals and public comments in cdpACCESS[™]. After the Committee Action Hearings, ICC members will Sign In / Register

Log in using your My ICC username and password

Remember me

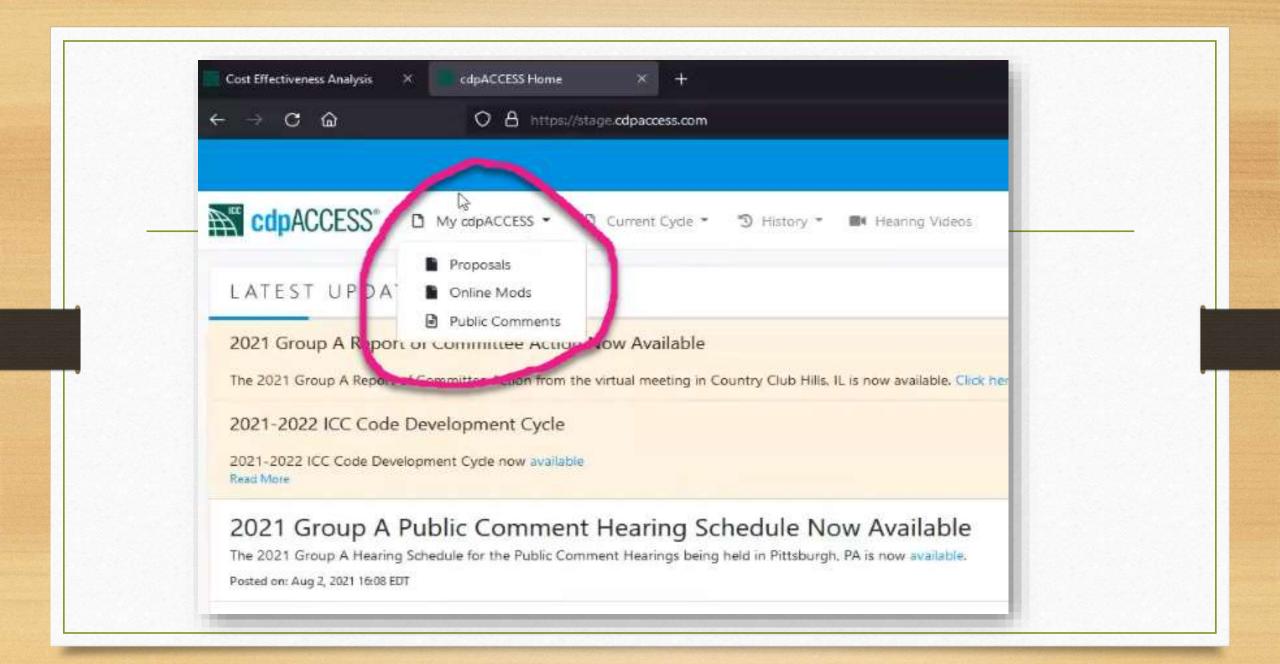
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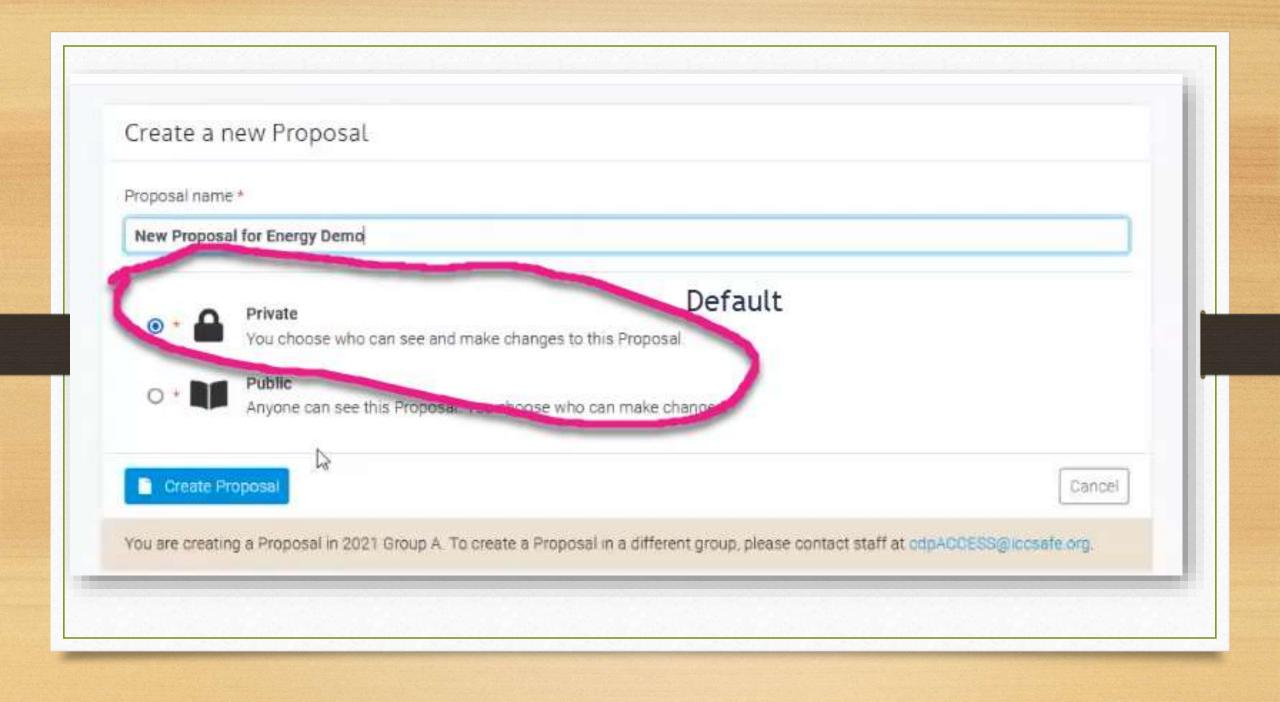
Log In

Click here to register

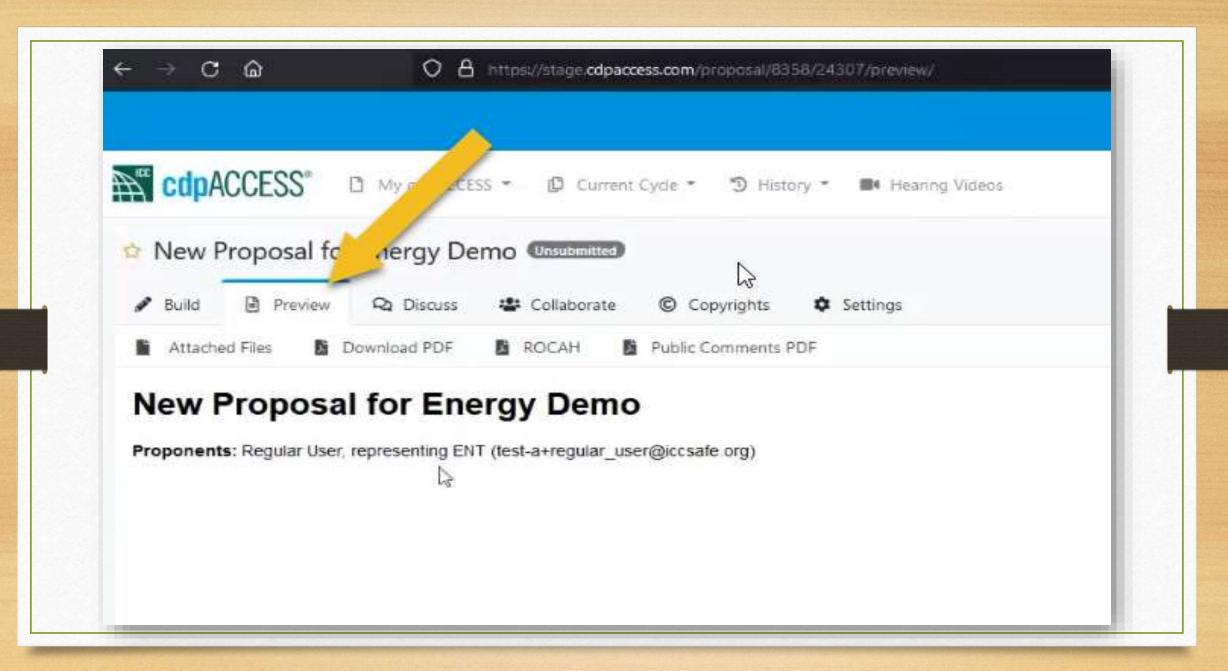
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ATEST UPDATES		LINKS
21 Group A Report of Committee Action Now Available	F Pinned	CP-28
2021 Group A Report of Committee Action from the virtual meeting in Country Club Hills. IL is now available. Click here for the results.		HELP
21-2022 ICC Code Development Cycle	F Pinned	
21-2022 ICC Code Development Cycle now available		Video Tutorials
D21 Group A Public Comment Hearing Schedule Now Available 2021 Group A Hearing Schedule for the Public Comment Hearings being held in Pittsburgh. PA is now available. ted on: Aug 2, 2021 16:08 EDT		Creating a Public Comment Automatic Legislative Markup disabled See more help topics
D21 Group A CAH Results Now Available		We're here to help! Send us an email and we'll get back to you right away.
onsolidated Monograph Updates e Consolidated Monograph Updates to the 2021 Group A code changes, including the 4/2/21 updates, is now available. Click here for the Updates. ted on: Apr 8, 2021 10:26 EDT		Please include your name and phone number
D21 Group A Proposed Changes 2021 Group A proposed changes are posted. Click here for the Group A website page for Group A cycle document postings. ted on: Mar 1, 2021 18:52 EST		
See All Updates		



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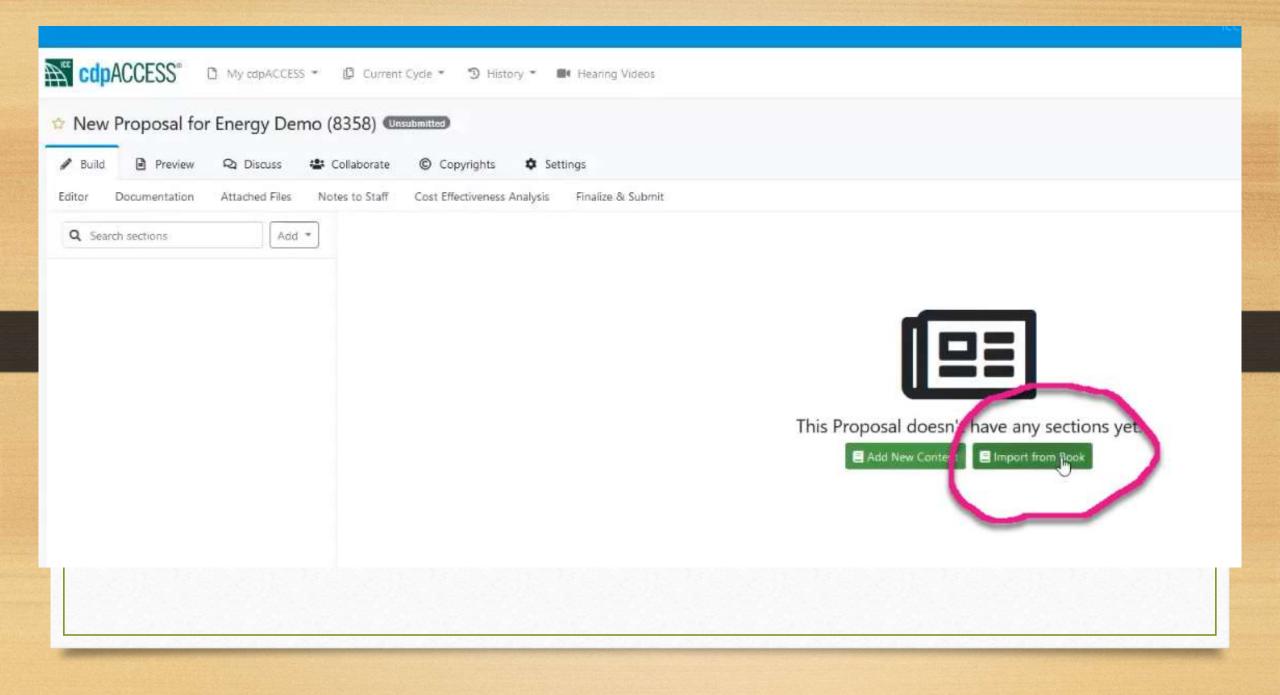


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New Proposal for Energy Demo (8358)		
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2021 International Code Council Performance Code		
2021 International Existing Building Code		
2021 International Fire Code		
2021 International Fuel Gas Code		
2021 International Mechanical Code		
2021 International Plumbing Code	~	
What would you like to add?		

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2021 International Building Code	CHAPTER 2 DEFINITIONS	SECTION 701 GENERAL
2021 International Code Council Performance Code	CHAPTER 5 PRESCRIPTIVE COMPLIANCE METHOD	SECTION 702 BUILDING ELEMENTS AND MATERIALS
2021 International Existing Building Code	CHAPTER 7 ALTERATIONS-LEVEL 1	SECTION 703 FIRE PROTECTION
2021 International Fire Code	CHAPTER 15 CONSTRUCTION SAFEGUARDS	SECTION 704 MEANS OF EGRESS
2021 International Fuel Gas Code	CHAPTER 16 REFERENCED STANDARDS	SECTION 705 REROOFING
2021 International Mechanical Code		SECTION 706 STRUCTURAL
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	 The existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing. 	roof or roof covering is not adequate as a base for additional roofing. 2. The existing roof covering is slate, clay, cement or asbestos-cement ti
	 The existing roof covering is slate, clay, cement or asbestos-cement tile. The existing roof has two or more applications of any type of roof covering. 	The existing roof has two or more applications of any type of roof covered.
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New Proposal for Energy Demo (8358)

IEBC: [BS] 705.2.1.1

Proponents: Regular User, representing ENT (test-a+regular_user@iccsafe.org)

2021 International Existing Building Code

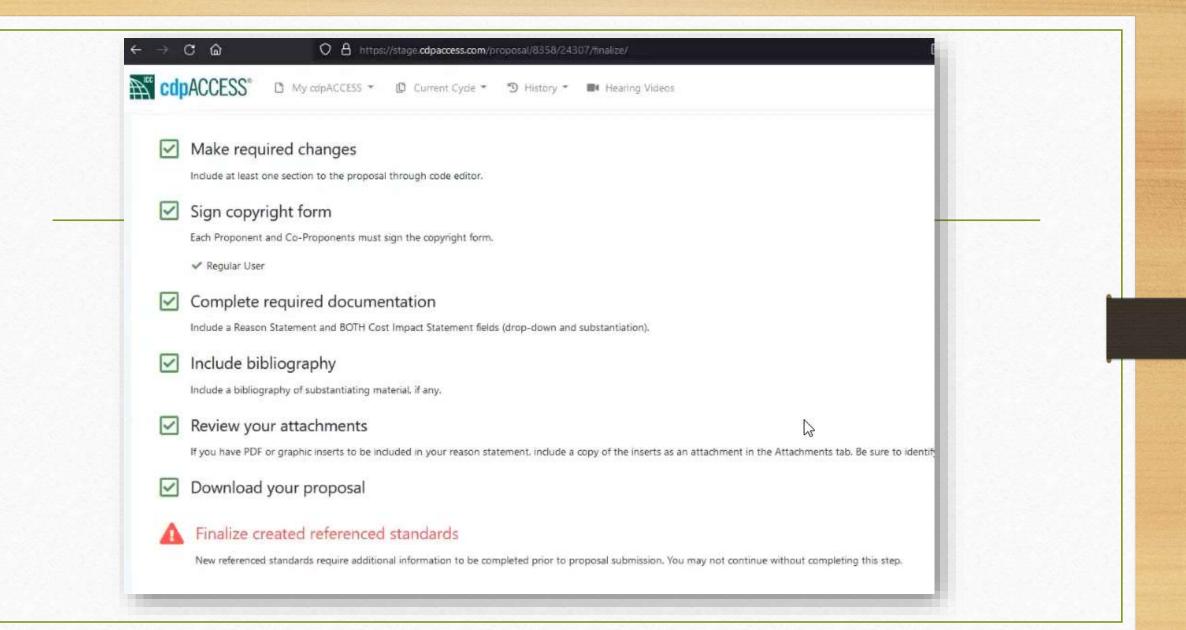
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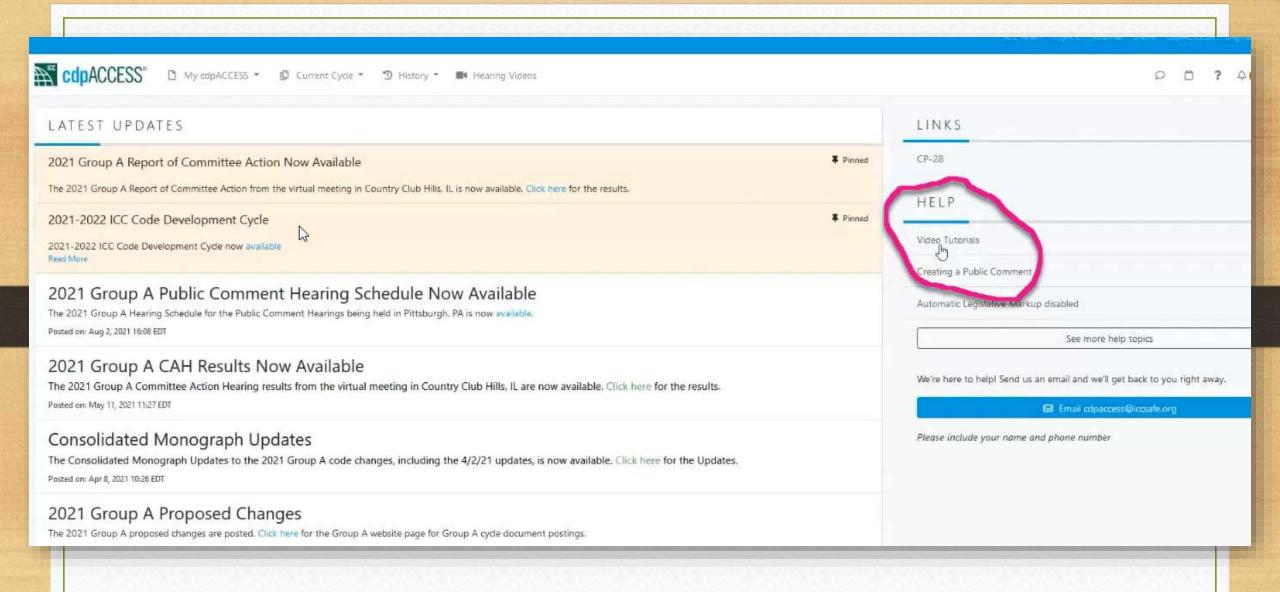
- [BS] 705.2.1.1,1 Exceptions. A roof recover shall not be permitted where any of the following conditions occur
 - 1. The existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
 - 2. The existing roof covering is slate, clay, cement or asbestos-cement tile.
 - 3. The existing roof has two or more applications of any type of roof covering.

Reason: This is great!

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2024 IECC Proposal submittal





Governor's Office of Energy

H.R.3684 Infrastructure Investment & Jobs Act

Potential Funding Opportunities

October 6, 2021

Robin Yochum, Energy Program Manager

Bill Overview H.R.3684

Authorizes funds for Federal-aid highways, highway safety programs, transit programs and other purposes such as:

- Grid Infrastructure & Resiliency
- Energy Efficiency & Building Infrastructure
- Fuels & Technology Infrastructure
- Passed the House 7/1/2021 & Senate 8/10/2021
- Currently resolving differences in the House, date of next meeting TBD

GRID INFRASTRUCTURE & RESILIENCY

Upgrading our Electric Grid & Ensuring Reliability and Resiliency

Electric grid reliability and resilience research, development, and demonstration. Energy Improvement in Rural or Remote areas

ENERGY EFFICIENCY & BUILDING INFRASTRUCTURE

Cost Effective Codes implementation for efficiency & resilience

Grants for Energy Efficient buildings & alternative fuel infrastructure for schools & non-profits FUELS & TECHNOLOGY INFRASTRUCTURE Carbon Utilization Program



FEDERAL-AID HIGHWAYS Charging & Fueling Infrastructure

Upgrading our Electric Grid & Ensuring Reliability & Resiliency

- Eligible Entities:
 - State; Indian tribe; Unit of Local Government; PUC
- Potential Funding Available (Competitive):
 - \$5 billion

Purpose:

- Demonstrate innovate approaches to transmission, storage, and distribution infrastructure to harden & enhance resilience & reliability
- Demonstrate new approaches to enhance regional grid resilience, implemented through states by public & rural electric coops on a cost-shared basis

Electric Grid reliability & Resilience, research, development & demonstration. Energy Improvement in Rural or Remote Areas

• Eligible Entities:

• State; Indian tribe; Unit of Local Government; PUC

Potential Funding Available (Competitive):

• \$1 billion

Purpose:

- Cost-effectiveness of energy generation, transmission, or distribution systems
- Siting or upgrading transmission and distribution lines
- Reducing greenhouse gas emissions from energy generations
- Providing or modernizing electric generation facilities
- Developing microgrids
- Increasing energy efficiency

Cost Effective Codes implementation for efficiency & resilience

Eligible Entities:

 State building code agency; state energy office or tribal energy office or a partnership between one of these entities and - Local building code agencies; codes and standards developer; association of builders and design and construction professionals; local & utility energy efficiency programs; consumer energy efficiency and environmental advocates

Potential Funding Available (Competitive):

• \$225 million

• Purpose:

 to enable sustained cost-effective implementation of updated building energy codes

Grants for Energy Efficient buildings & alternative fuel infrastructure for schools & non-profits

- Eligible Entities:
 - Public Schools, non-profits
- Potential Funding Available (Competitive):
 - \$500 million
- Purpose:
 - Local school agencies, encouraged to work with community partners, includes HVAC



Carbon Utilization Program

Eligible Entities:

• States, local governments, PUC

Potential Funding Available (Competitive):

• \$300 million

Purpose:

• Grants can be used to procure commercial or industrial products that use or are derived from anthropogenic CO2 and demonstrate significant net reductions in GHG emissions compared to incumbent technologies, processes, and products.

Charging & Fueling Infrastructure

• Eligible Entities:

• State; metropolitan planning organization, unit of local government, special purpose district or public with a transportation function, Indian tribe

Potential Funding Available (Competitive):

• \$2.5 billion

Purpose:

• Establish grant program to strategically deploy publicly accessible ev charging infrastructure