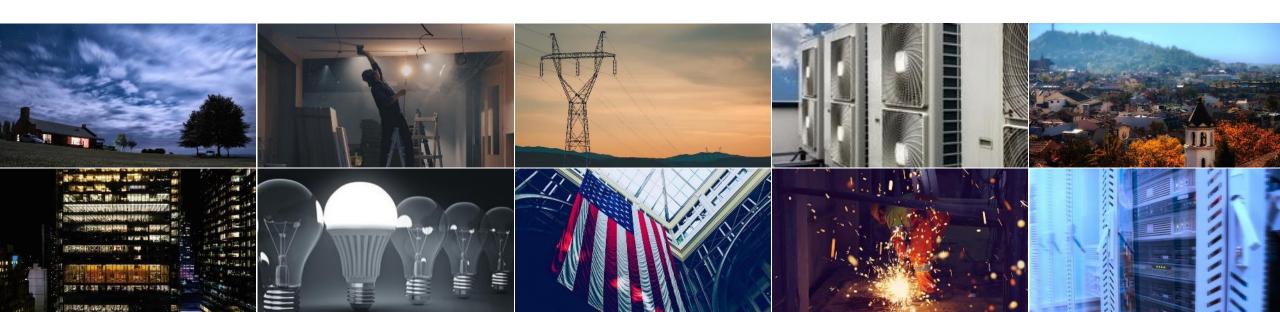


Resilient and Efficient Codes Implementation Infrastructure Investment & Jobs Act

National Energy Codes Conference July 20, 2022



Infrastructure Investment and Jobs Act (IIJA)

Section 40511: Cost-effective Codes Implementation for Efficiency & Resilience

Highlights:

- \$225 million for implementation activities supporting updated energy codes
- Encourages "partnerships" comprised of states and other key stakeholders
- Intended to support code updates—not limited to only the latest codes (currently the 2021 IECC and Standard 90.1-2019)
- Amplifies technical assistance supporting code implementation, and builds on many traditional activities, while scaling these efforts significantly
- > DOE engaged stakeholders and the general public to seek feedback on priorities and activities of the program

Where are we today?

Progress made by DOE toward Section 40511 execution:

- Request for Information (RFI) issued on April 18 (comments due May 20)
 - Received comments from over 70 entities
 - DOE has reviewed and considered all comments received
- Public workshop held on April 27
 - Over 200 participants across a wide range of interests
 - Learn more about the workshop at <u>energycodes.gov</u>

> We'll be talking more about Section 40511 during today's session, including summarizing key topics, feedback received, and next steps



Section 40511: Eligible Entities

ELIGIBLE ENTITY.—The term 'eligible entity' means— '(A) a relevant State agency, as determined by the Secretary, such as a State building code agency, State energy office, or Tribal energy office; and '(B) a partnership.

(A) State agencies

- To be determined by the Secretary of Energy
- Examples: State energy offices, Tribal energy offices

(B) Partnerships

- More on this momentarily...
- > What state agencies are most relevant to the initiative?
 - Energy, code administration, resilience, safety, others?

Section 40511: Partnerships

PARTNERSHIP.—The term 'partnership' means a partnership between an eligible entity described in paragraph (1)(A) and 1 or more of the following entities: "(A) Local building code agencies. "(B) Codes and standards developers. "(C) Associations of builders and design and construction professionals. "(D) Local and utility energy efficiency programs. "(E) Consumer, energy efficiency, and environmental advocates. "(F) Other entities, as determined by the Secretary.

Partnership between:

- Local building code agencies
- Codes and standards developers
- Associations of builders, design and construction professionals
- Local and utility energy efficiency programs
- Consumer, energy efficiency, and environmental advocates
- Other entities as determined by the Secretary of Energy
- > What "other entities" should be considered or emphasized?
- > What can (and should) constitute an effective partnership?

Section 40511: Code Updates

UPDATED BUILDING ENERGY CODE.—An update to a building energy code under this section, including an amendment that results in increased efficiency compared to the previously adopted building energy code, shall include any update made available after the existing building energy code, even if it is not the most recent updated code available.

Updates:

- Increase energy efficiency compared to the previously/currently adopted code
- Can be any update more recent than the existing/currently adopted code
- Are not constrained to the most recent code editions (e.g., 2021 IECC and 90.1-2019)
- > How should DOE evaluate and prioritize the impact of a proposed update?
- > How should DOE balance recent vs. planned vs. aspirational updates?

Section 40511: Criteria and Priorities

CRITERIA; PRIORITY.—In awarding grants under subsection (b), the Secretary shall—

1. Consider:

- Impact: Prospective energy savings and plans to measure the savings
- Long-term sustainability of measures and savings
- Prospective benefits, and plans to assess benefits, including resilience and peak load reduction, occupant safety and health, and environmental performance
- Demonstrated capacity to carry out the proposed project
- Need for assistance

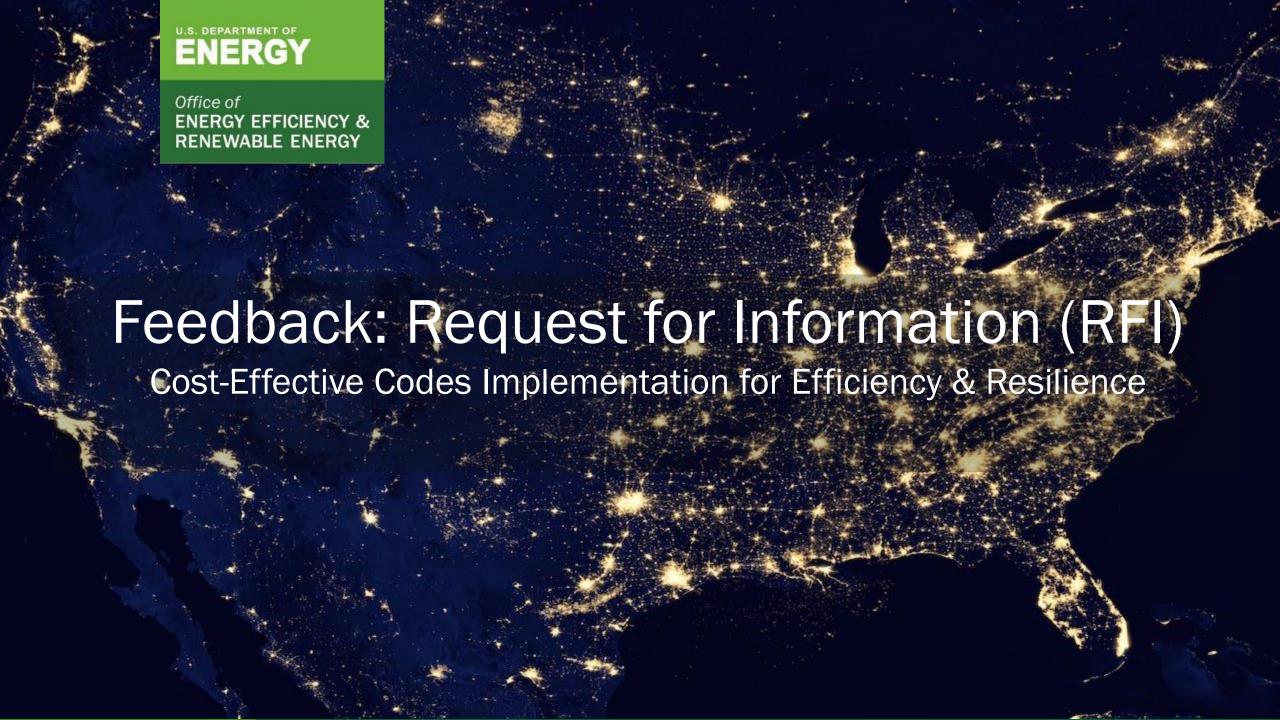
2. Prioritize partnerships

- > What methods are appropriate for measuring and determining savings impacts?
- > How should DOE evaluate the sustainability and long-term effects of a project?
- > Are there additional benefits that should be considered/prioritized?

Section 40511: Sample Activities

Examples specified in the IIJA:

- Create or enable state or regional partnerships to provide training and materials
- Collect and disseminate data on construction and code implementation
- Develop and implement a plan for effective implementation, including measuring compliance
- Address implementation needs in rural, urban, suburban areas
- Implement updates in energy codes
- > What types of partnerships can help DOE maximize its technical assistance activities supporting building energy codes?
- > What additional activities should be considered?



Request for Information (RFI) and Public Workshop

DOE issued an RFI and held a public workshop to better understand current implementation needs, as well as to help guide this new initiative.

The RFI and public workshop featured several key areas of interest:

- 1. Adoption
- 2. Workforce Development
- 3. Implementation and Compliance
- 4. Innovative Approaches
- 5. Energy and Environmental Justice (EEJ)
- 6. Partnerships
- > DOE asked a number of questions across each of these topics

What outcomes are targeted under this initiative?

The RFI also emphasized several desired outcomes:

- 1. Develop the next-generation workforce
- 2. Facilitate energy code updates
- 3. Advance new and innovative policies and tools
- 4. Increase equity in code-related policies and planning
- 5. Improve energy code compliance

See the official RFI and full list of questions at:

https://www.energycodes.gov/RECI-codes-workshop

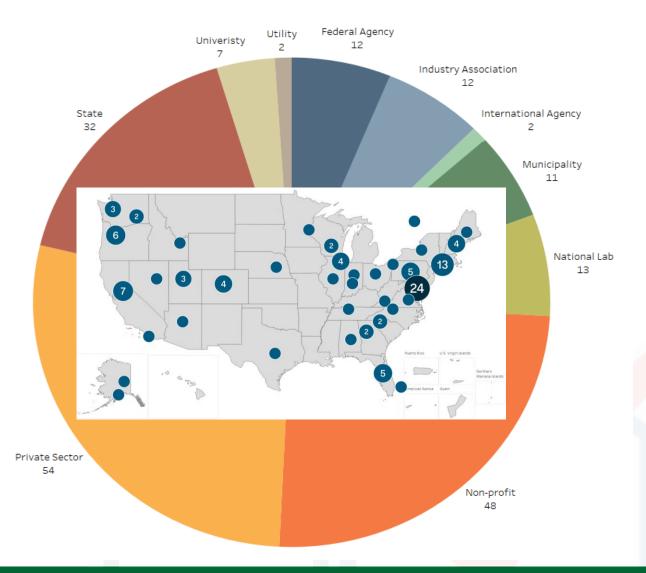
Feedback on Key Topic Areas

Who participated in the RFI and Public Workshop?

Diversity of Voices:

- RFI comment period over 30 days
- DOE held workshop to gather additional input
- Nearly 200 attended the workshop
- DOE received over 70 sets of RFI comments

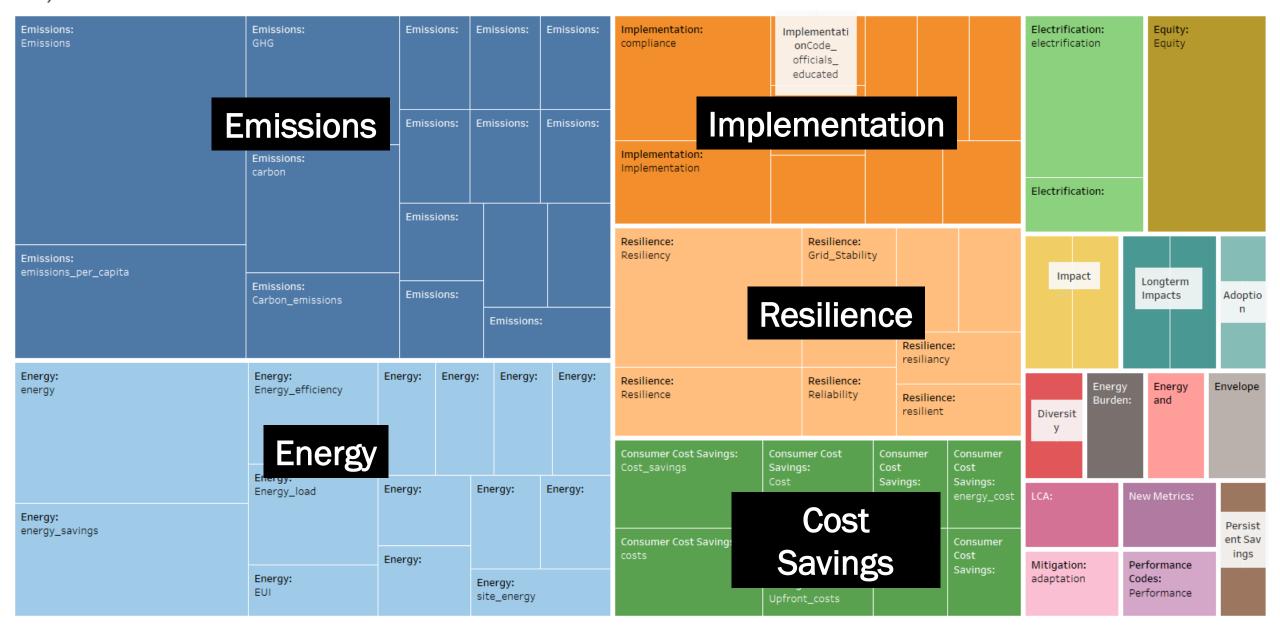
Workshop Attendee Summary



Key Themes: Energy Code Adoption

- How should code updates be evaluated?
 - Emissions reduction, energy savings, estimated impact (e.g., construction starts, percentage improvement, etc.), implementation potential
- What is considered a code update?
 - Latest model code, at least 2018 IECC, any improvement, no weakening amendments, count recent & future code updates (e.g., 1-3 yrs.)
- How can model code adoption and updates be sustained over time?
 - Require or prioritize implementation plans, compliance support (tools, training, tech. support), legislation, funding tied to actual adoption

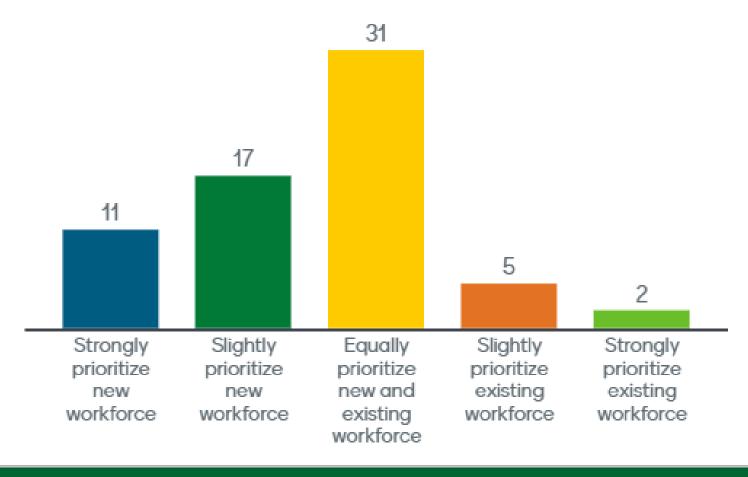
Adoption: What metric should DOE prioritize when assessing impacts of an updated state or local energy code (e.g. energy, emissions, etc.)?



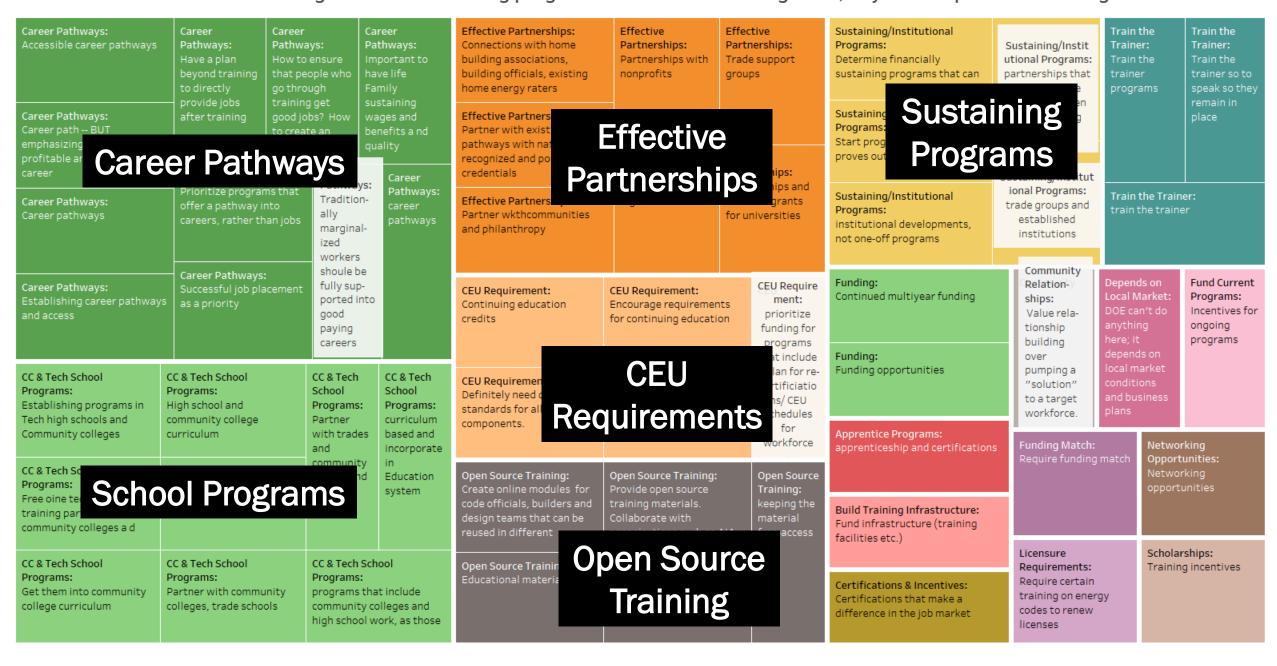
Key Themes: Workforce Development

- How should DOE balance support for the new vs. existing workforce?
 - Prioritize both with a call to "widen the tent" (e.g., increased diversity, career pathways, high school programs)
- How can DOE best support an equitable workforce?
 - Community outreach and accessible training, secondary and higher-ed partnerships, free training programs, career pathways, scholarships
- What are the most effective training methods and tools?
 - Training: In-person and online training, certification programs, code consultants, compliance collaboratives
 - Tools: COMcheck/REScheck updates, remote/virtual tools, inspection software, energy modeling, automated plan review, electronic permitting and digitization

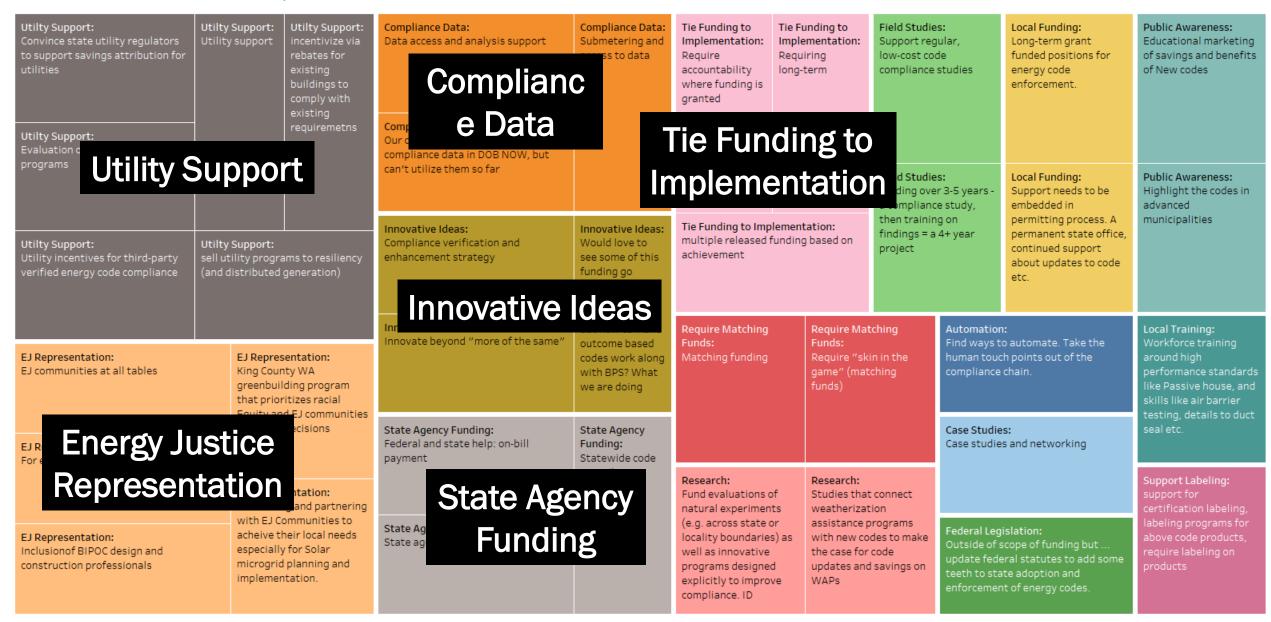
How should DOE prioritize training a new workforce entering the job market versus training the existing workforce on the latest energy code?



Workforce: How can DOE encourage workforce training programs to be sustained long-term, beyond the period of funding?



Implementation: How can DOE effectively support long-term compliance improvements? (e.g., field studies, compliance collaboratives, utility code support programs)

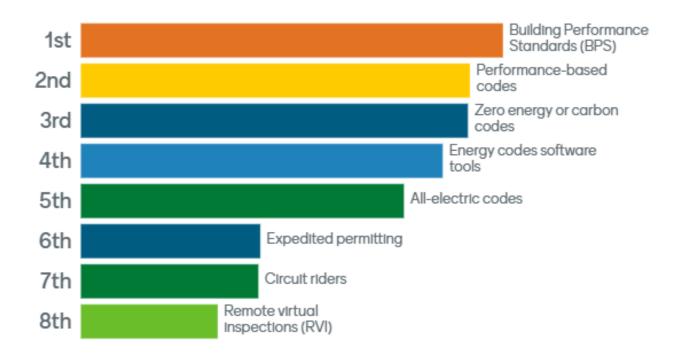


Key Themes: Innovative Approaches

How can DOE foster innovation in energy code implementation?

- Encourage partnerships between regions, states, local governments, and other local governmental bodies (e.g., councils of governments)
- Encourage partnerships with utilities
- Provide flexibility and don't be overly prescriptive to the type of innovation
- Cities are uniquely positioned to test innovative approaches; fund cities
- Better understand how codes need to change to adapt to climate change
- Incentivize adoption of an energy code and BPS together to ensure alignment
- Deploy a circuit rider (code consultant) in each state to support code updates and stretch code development

Please rank innovative approaches covered in this presentation by importance to resilient and efficient codes implementation.



Key Themes: Innovative Approaches (continued)

- How can DOE create alignment between building codes and BPS?
 - Align code and BPS metrics, require commissioning in codes, benchmarking, industry education, analyze how new buildings perform against BPS
- How can DOE improve implementation in existing buildings?
 - Expand code reqs. during retrofit, adjust threshold when code applies,
 Streamline compliance in existing buildings (e.g., RVI, expedited permitting)
- What other complementary policies should be considered?
 - Implement time of sale disclosures, develop more robust incentives, expand EE appraisals

Innovative Approaches: What are other key innovative approaches that were not yet covered in the discussion?

Appraisal of energy Appraisal: A	EE Appraisal: Real estate ers	Include solar and		Storage: PV plus age	Energy Reporting: Add data/buildings to Energy Reporting: Benchmarking practic and ordinances	Require all new	IAQ: Healthy	IAQ: IAQ	Innovative Compliance: New evidence- and lived experience- based program design and evaluation to improve complianc and workforce development	Code that addr the u	es: ess ess	Fuel Codes: Full fuel cycle (source energy) basis for	Successfi Non-profi its: Focus on nonprofit that have implement ed successful energ programs	Non-profits: Focus on nonprofits with proven energy y track
Embodied Carbon: Embodied Embo	Embodied In: died n	Successful examples: Are there international codes that have been very successful that we Successful examples: Successful examples: Successful examples: Successful examples:		Success- ful ex- amples: progres e local e local e exam-	Grid-Interactive: Grid-interactive technologies Grid-Interactive: Off-Grid, Micro-Grid 1	Grid-Inter- active: Zero carbon and microgrid planning over time	3rd Party Inspectors: 3rd party Energy Ratings Climate Mitigation:		Environmental advocates: Program Design: How to make these programs		nake s	Financing: Financing		Indoor Air Quality: Indoor Air Quality
Code Building E	Existing Building Codes:	Examples of projects hold the hold that are working up as	nts and nold then up as examples	pro- grams pas that are	Low Carbon Materials Low and negative car materials Low Carbon Materials Natural building	bon Materials: low GWP refrigerants for heat	landscape	ratened by n levelsinc. mitigation / Engagement: rgh community	Mortgage Incenti Mortgage incenti Off-site Construct	Ves Codes: Resilien codes ar metrics	Numbe Trackin and Serial	nber :king: al nber	ng: Compliance: Craft the application form to guide	
CODES TO ADDRESS EXISTING BUILDINGS Passive House Codes: Passive House House	with code and Passive House Codes:	Compliance Tools: Software for thermal bridging (free to all for code EEJ Investment: Bringing jobs and benefits to EJ communities EEJ Investment: EQUITABLE BUILDING DECARBONIZATION		speed up solar and other energy measure compliance	Builder Incentives: Builder above code incentives	Builder Incentives: Rebates/funds to existing buildings that upgrade to meet current code	Density De Codes: density dep Energy Bur Energy bur	pendent codes	Outcome Based Codes: NBI outcomes based code Passive Survivability: USGBC passive survivability standards		Historic buildings with thermal image Water efficiency: Water efficiency		nontraditional building approaches: nontraditional building	
Passive House Passive house thermal bridging.	e			Investment: focus on low income	EE & Resilience: Meld resilience measures with energy measures	EE & Resilience: There's plenty of FEMA/BRIC fundingpartner with local FEMA	Energy Rat Home Ener	i ngs: gy Ratings					& ene codes prope	property transfers & energy building codes: property transfers & energy building

Key Themes: Energy and Environmental Justice (EEJ)

- What EEJ concerns are most relevant to the initiative?
 - Funding and benefits to EEJ Communities, community engagement, energy burden, affordable housing, indoor air quality, resilience
- How can DOE best support disadvantaged communities?
 - Accessible engagement (e.g., stipends, childcare, direct outreach), removing barriers to entry, workforce development, community partnerships
- What strategies can best support EEJ goals?
 - Digital and streamlined compliance tools, require DEI plan & EEJ project partners, measurement and evaluation of project outcomes, fund projects at local level, reduce program application burden

EEJ: How can we ensure that environmental justice concerns are mitigated through the development of effective building energy codes?

Community Engagement:

Engage Minority and CBOs that are familiar in DACs to conduct the initial and ongoing M&O prpgram to help assure a level of comfort followed by greater involvment of those communities

Community Engagement:

Partner with Epa aND OTHER AGENCIES and Ei communities the selves to define prioritizations and metrics for countabity

Needs Assessment:

energy

Energy Retrofit Banks:

Establish energy retrofit banks

Intersection between codes and BPS: Complement new building

focused policy with existing building policy that will not harm renters and will reduce energy

Prioritize Highest Energy Burden:

Prioritizing areas with the highest energy burden for implementation.

Community Engagement

them in the process - build from the ground up and build capacity in communities to address.

Partner with communities to identify needs and plan together how codes will meet that goal

Needs Assessment:

data on community cost of natural disasters related to

Needs Assessment

Prioritize Improved Air Quailty:

Focus on codes that include all electric pathways help address the air quality burden. Higher standards for envelope help with renters energy

Require EEJ in RFP:

Require this in the RFP

Standardization-

Learn from other Programs (e.g. LIHTC):

DOE Host a Fourum on LIHTC Barriers and Solutions development in the amrket

Learn from Other Programs

Learn from other Programs (e.g. Linic).

The LIHTC community works miracles to get affordable housing built -- DOE should work with them to ID barriers and ways to remove them.

DOE Engage in code development:

Have DOE write a sternly-worded letter to ICC to include them in the development process

Direct Funding & Benefits to EEJ Communities:

Cost is going to be a big thing -- energy burden runs deep in EJ communities. More incentives is going to be key.

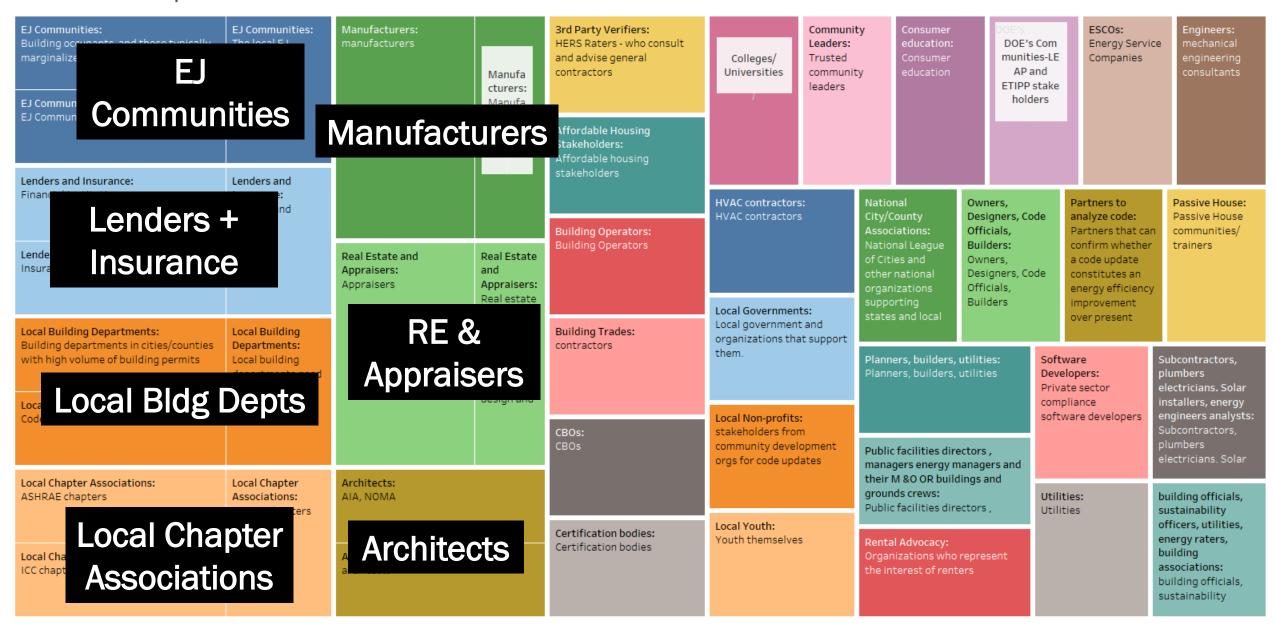
Representation: Development:

have EJ communities at the table when developing the codes

Key Themes: Strategic Partnerships

- The IIJA specifies that partnerships should be prioritized
- How can DOE encourage successful partnerships?
 - Interests commonly cited include: Federal, state, local agencies
 (especially those involved in code adoption and implementation), regional
 organizations, National Labs, industry and practitioners (e.g., builders,
 designers, engineers, manufacturers, trade organizations), NGOs,
 universities and academia
- What is the appropriate role for local governments?
 - Local governments should be an active partner, local building departments are critical, EEJ happens at local level, areas for innovation

Partnerships: Which stakeholders are critical to a successful partnership? Are there additional (non-project) partners and stakeholders who should be emphasized?



Feedback on Prioritization and Evaluation

How should DOE prioritize different criteria when evaluating applicants? [1 = heavily favor of option one, 5 = heavily favor option two.

1. Rural vs. 2. Urban areas Residential vs. 2. Commercial construction Heavily favor option Leading vs. 2. Lagging states (in terms of code adoption) Current model codes vs. 2. Previous editions Traditional codes activities vs. 2. New approaches 1Activities that only use DOE funding vs. 2. Activities that leverage other funding sources

Heavily favor option (



Partnerships: What other criteria should DOE prioritize when evaluating applicants?

	EJ Community Engagement: Inclusion of EJ communities EJ munity gement	EJ Community Engagement: Inclusion of EJ communities, equity, energy burden ment: and benefits	Data Collection: Creating data can be used and maintained into the future Demonstrated Successes: Applicant's prior successes	Demonstrated Successes: prior demonstration of success	Energy Use Reporting: Sustained monitoring of building performance	Energy Use Reporting: reporting	Reduce Energy Burden: Energy burden lessened	Reduce B Burden: Reduction energy b	on of	Statewide Influence: Ability to hav statewide influence	Statewide Influence: e a Statewide impact	
major efforts count) Existing Buildings:					Historic Buildings: City with many Historic buildings		National Influ Ability to have national influ	e a	New Mat New mat options		Partnerships: partnerships	
Effective addressing existing buildings more funding for states that get the most existing buildings up to current Existing Existing Buildings: Existing buildings over ner Buildings gs: In g buildings			Emissions Reduction: GHG emission	Emissions Reduction: eliminating fossil fuels and ghgs	Market Transformation: market transformation Model Code Adoption: Number of communities adopting current code							
							Real examples	Pilot Studies: Real examples that validate proposal (pilot study etc)		Sustained Impact: Whether partnership will have natural	Zoning: coordination with zoning densification policies	
construction - esp. multifamily Const	n lots of now llame building values / permit number and efootage for new		Energy Savings: Large energy users	Energy Savings: What is the actual predicted energy savings/ghg emissions saved?	NEBS: Non energy benefits		Replicability: Replicability				to do ırk e	

Partnerships: How should DOE track overall outcomes from this funding? What metrics should DOE request from each project team?

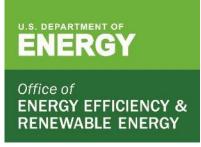


Next Steps

Planned next steps in executing Section 40511 of the IIJA:

- Next Step: Notice of Intent (NOI) with additional details
- Funding Opportunity Announcement (FOA) in Fall 2022

- > Teaming list available on <u>EERE Exchange</u>—get added by emailing <u>becp@pnnl.gov</u> with the subject "RECI FOA: Teaming Partner Information"
- > Sign-up for BECP updates at www.energycodes.gov/subscribe
- > Keep an eye out for more information soon!



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