DE-FOA-0002755—Bipartisan Infrastructure Law (BIL): Request for Information Resilient and Efficient Codes Implementation (RECI)

Submitted by:

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The National Insulation Association® (NIA) is a not-for-profit educational trade association representing merit and union contractors, distributors, laminators, fabricators, and manufacturers that provide thermal insulation, insulation accessories, and components to the commercial, mechanical, and industrial markets throughout the nation. Since 1953, the northern Virginia–based association has been the voice of the mechanical insulation industry and is dedicated to keeping the commercial and industrial sectors up-to-date on the latest industry trends and technologies.

Category 1: Technical Requirements

1.1 How can a potential RECI FOA support a professional workforce that is trained on the latest codes, as well as skilled in advanced technologies, decarbonization, construction practices and building science that can be sustained over time? How should DOE prioritize training a new workforce entering the job market versus training the existing workforce on the latest in energy code and building construction trends?

The support should come in the form of education and training. A simple solution to prioritizing is to evaluate and implement those existing technologies that stand the test of time, do not require advanced degrees to implement, can be taught quickly, are easy to understand, and are readily available.

For example, creating a series of pre-recorded modules that can be used for code official training in understanding:

- The impact of mechanical insulation on indoor air quality concerns (e.g., mold development, etc.);
- Energy efficiency opportunities and the impact on reduction of carbon emissions, including why mechanical insulation is often overlooked;
- The ease of determining return on investment (ROI), etc., on energy efficiency related topics (e.g., 3E Plus software/appraisal program);
- Why it is important to think about freeze protection sooner than later;
- Insulation systems for maintenance and/or retrofit projects;
- Where insulation is normally found in buildings and why (an overview of all insulation segments—roof, envelope, mechanical, original equipment manufacturer [OEM], and resource information, etc.), including passive protection;

- Why it is important for proper and timely repair or replacement of damaged insulation; and
- The importance of and how to determine what insulation system(s) are being installed in new buildings, retrofit, and in existing buildings.

Solution: Development of the learning modules through partnership NIA and making the modules available to all code agencies.

1.2 How can DOE effectively support long-term state and local energy code compliance improvements (e.g., compliance tools, compliance training, etc.)? Are there any successful compliance improvement models that can be emulated? If so, what makes them successful?
Training and education are key to the success of this program moving forward. NIA can provide training on the mechanical insulation code compliance and would be willing to work with other trades on developing assessment and training tools.

1.4 How can innovative approaches that address existing buildings (e.g., BPS) complement and be better aligned with energy codes which primarily address new construction? Are there effective models that can be replicated? If so, what are these models and what makes them successful?
When a retrofit occurs, incentives to bring the space up to these codes should be a priority and training should be made available. Without such incentives, the extent of the areas that may need to be replaced or retrofitted could become cost prohibitive.

Category 2: Supporting State Code Adoption
2.1 How should DOE prioritize code updates? More specifically, should updates to the model energy code be prioritized based on potential energy and/or carbon savings as compared to the current baseline within each state? How should DOE prioritize updating to a code more advanced than the current model code?
For prioritizing: If the objective is to include carbon reduction, then the obvious answer is that the codes need to be looked at differently.
For improving codes: To obtain the maximum results, considerations such as mechanical insulation improvements or just even getting mechanical insulation in the building (yes, it if often left out) should be a recommendation, and in some cases, it should go beyond current codes.

How should DOE ensure that States have implementation plans to sustain the adoption of model energy codes over time?
Provide them with training resources and then have the results of their work be entered into a tracking database. In addition, hiring professionals to perform assessments before and after will

provide the needed data to support this effort. DOE should also look at providing the needed training/education for the States to be able to recognize the needs.

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Category 3: Partnerships, Eligible Entities, and Evaluation Criteria

3.1 What types of strategic partnerships should DOE emphasize that can help best address challenges facing states, local governments, and the broader industry in energy code implementation (e.g., network of states and local governments to enhance implementation, national energy codes collaborative to provide thought leadership on codes activities, etc.)?

Engage in obtaining proper educational resources that these entities can utilize. For example, field inspection for compliance related to mechanical insulation needs to become a requirement not only for the thermal value and other properties of the insulation system being used but also for the installation.

Solution: Working in conjunction with NIA to develop a 1–2 day certified mechanical insulation inspector course tailored specifically for code officials in new building and retrofit applications.

Category 4: Funding and Period of Performance

4.1 Is a period of performance of 3-5 years reasonable? If not, what is appropriate and why?

Given the magnitude of this achievement, 5–7 years might be more realistic. Looking at communications, the educational process, hiring needed personnel, and setting up the programs could easily take 12–18 months. The implementation of this process will be dependent upon the states' schedule, availability of personnel, continuing education, sheer magnitude of projects, and recording the data.

Category 5: Energy and Environmental Justice (EEJ) Priorities

5.2 How can DOE incentivize partnerships with community partners (such as nonprofits), minority-owned businesses and significant engagement of HBCU/MSI/TCU partners?

- Make the process easier for nonprofits to engage.
- Assist nonprofits new to the process of this type of engagement by creating an Engagement Ambassador program that assists with entities that are new to the process.
- Consider a mentor type of relationship with entities that have worked with DOE previously to work with those that have not.

Category 6: Other

6.1 How should DOE prioritize projects that will be long-lasting and sustainable beyond BIL funding?

Go with the low-hanging fruit, such as projects where code improvements can result in increased energy efficiency, enhanced decarbonization benefits, and improved air quality by using sustainable, existing, proven, and inexpensive technologies that are readily available.

6.2 How should DOE track overall outcomes from this funding? What metrics should DOE request from each project team to better understand impacts?

Develop a matrix addressing the differences in building, energy, and other related codes for mechanical insulation systems. This would be an educational tool in helping building designers, code officials, and many others understand the differences, as well as the value of each, including the value of going beyond code minimum requirements.

Solution: Development of the information through partnership with NIA and making the information available to facility owners, the design community, and other building industry segments.

6.4 Please provide any additional information or input not specifically requested in the questions above that you believe would be valuable to help DOE develop a potential RECI FOA.

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system being used but also for the installation.

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- Assessing the opportunity for energy savings and the risk of indoor air quality concerns (e.g., mold development) with damaged or underperforming mechanical and HVAC duct insulation.

    - Solution: Develop case studies to demonstrate the value of timely identification and repair/replacement of damaged or underperforming mechanical and HVAC duct insulation in commercial buildings.

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