

DE-FOA-0001326: Request for Information (RFI) – Building America Program Technology-to-Market Roadmaps

DATE: 4-2-2015

SUBJECT: Request for Information (RFI)

DESCRIPTION:

The U.S. Department of Energy's (DOE's) Building Technologies Office (BTO), within the Department's Office of Energy Efficiency and Renewable Energy (EERE), is developing a new research-to-market plan, focused on substantially solving three key technical challenges in the next five years. Successfully meeting these critical challenges will help transform the market for new zero energy ready homes and will lead to significant improvement in the energy efficiency and performance of existing homes across the United States (U.S.). As part of this new research-to-market plan, the BTO's Building America program seeks feedback on three (3) draft integrated technology-to-market roadmaps that highlight proposed Building America program goals and objectives for each key technical challenge:

- A. High Performance, Moisture Managed Envelope Systems
- B. Optimal Comfort Systems for Low Load Homes
- C. Optimal Ventilation Systems and Indoor Air Quality (IAQ) Solutions for Low Load Homes

Feedback solicited from this RFI related to these draft technology-to-market roadmaps will be used in part to help plan and develop future Building America Funding Opportunity Announcements (FOA's), as the Building America program works to meet its 2030 goals stated below.

BACKGROUND:

The long-term goal of EERE's Building Technologies Office is to develop and deploy technologies and systems to save the nation \$2.2 trillion in energy-related costs through a 50 percent reduction in building energy consumption. To deliver on this goal, BTO employs a three-pronged strategy for advancing building technologies and practices, referred to as the BTO Ecosystem:

- 1) Research & Development (R&D) of advanced technologies primarily through the Emerging Technologies (ET) Program;

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2) Market Stimulation of Innovations through the Residential Building Integration (RBI) and Commercial Building Integration (CBI) Programs; and

3) Codes and Standards development and implementation through the Building Energy Codes and Appliance and Equipment Standards Programs, to raise minimum industry standards once higher performance technologies are proven cost-effective at scale.

The ET Program is BTO's primary R&D program, leading up to commercialization of advanced building technologies. However, commercially available equipment and materials are often under-utilized in the field due to building integration issues and market barriers. BTO addresses these challenges for residential buildings through its RBI Program, which works within the BTO Ecosystem to stimulate market adoption of whole house energy saving innovations. RBI Program goals include:

- 1) Demonstrate at scale, market-relevant strategies for new homes offering savings of 50% or more by 2025; and,
- 2) Demonstrate at scale, market-relevant strategies offering savings of 20% or more for existing homes by 2020, 25% or more by 2025, and 40% or more by 2030.

RBI's Building America program conducts applied research, development, and demonstration (RD&D) in residential buildings, in many cases linking technologies from the ET Program to the Codes and Standards programs through demonstration projects that cost-effectively integrate these emerging technologies into residential building systems. Building America projects, led by DOE national labs and expert building science teams in partnership with leading industry players – i.e., builders, contractors, manufacturers and others - solve both technical and market barriers to housing innovation. By selecting qualified Building America teams and projects to leverage influential early adopters, the program stimulates market adoption of energy saving technologies and practices in new high performance homes and existing home improvements that would normally be perceived by key market actors as too risky or costly.

Building America industry partnership teams demonstrate that high-performance technical solutions and best practices are low-risk and can lead to added business benefits. Voluntary above-code programs (e.g., ENERGY STAR for New Homes, Home Performance with ENERGY STAR) and participating early adopters then follow Building America's lead, resulting in greater market penetration and adoption of energy saving technologies and practices, ultimately paving the way for better industry standards and advanced building codes. DOE selects strategic Building America projects that can simultaneously develop and demonstrate better technologies and practices while overcoming critical market barriers to adoption, such as real and perceived technical and business risks, and codes and standards limitations.

Following on past Building America successes and lessons learned, DOE identified critical research and information gaps for three key housing technology areas. Filling these gaps will be the focus of the program's new research-to-market plan. The plan will set specific program

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targets for the next five years with three integrated and strategic technology-to-market roadmaps, described in the supporting documents to this RFI. Meeting the strategic objectives of the three roadmaps will accelerate adoption of high performance homes and home improvements throughout the U.S. housing industry.

The Building America technology-to-market roadmaps will be developed and refined with periodic inputs from stakeholders and building science experts to ensure continued market relevance and value. The roadmaps are integrated to ensure strong links among BTO's ET Program, Building America's RD&D results, RBI deployment programs (i.e., Zero Energy Ready Homes, Better Buildings, and Home Performance with ENERGY STAR), and BTO Codes and Standards initiatives.

Feedback solicited from this RFI related to the draft technology-to-market roadmaps may be used, in part or whole, to plan and develop the Building America Fiscal Year 2016 FOA and possible future FOAs, as the Building America program works to meet its 2030 goals.

PURPOSE: The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to the attached Building America draft technology-to-market roadmaps, which detail the program's goals and objectives for conducting applied RD&D and associated deployment activities related to the following critical technical challenges:

- A. High Performance, Moisture Managed Envelope Systems
- B. Optimal Comfort Systems for Low Load Homes
- C. Optimal Ventilation Systems and IAQ Solutions for Low Load Homes

Details about the three draft technology-to-market roadmaps are provided in a supporting document to this RFI.

EERE is specifically interested in information on how these draft technology-to-market roadmaps can be refined and used to assist the Building America program and the RBI Program to meet BTO goals, as well as feedback on the proposed timelines for implementing the Building America research-to-market plan. This is solely a Request for Information and not a Funding Opportunity Announcement (FOA). Therefore, EERE is not accepting applications for this announcement.

DISCLAIMER AND IMPORTANT NOTES: This RFI is not a Funding Opportunity Announcement (FOA); therefore, EERE is not accepting applications at this time. EERE may issue a FOA in the future based on or related to the content and responses to this RFI; however, EERE may also elect not to issue a FOA. There is no guarantee that a FOA will be issued as a result of this RFI. Responding to this RFI does not provide any advantage or disadvantage to potential applicants if EERE chooses to issue a FOA regarding the subject matter. Final details,

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including the anticipated award size, quantity, and timing of EERE funded awards, will be subject to Congressional appropriations and direction.

Any information obtained as a result of this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. EERE will review and consider all responses in its formulation of program strategies for the identified materials of interest that are the subject of this RFI. EERE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that EERE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind EERE to any further actions related to this topic.

PROPRIETARY INFORMATION: Because information received in response to this RFI may be used to structure future programs and FOAs and/or otherwise be made available to the public, **respondents are strongly advised to NOT include any information in their responses that might be considered business sensitive, proprietary, or otherwise confidential.** If, however, a respondent chooses to submit business sensitive, proprietary, or otherwise confidential information, it must be clearly and conspicuously marked as such in the response.

Responses containing confidential, proprietary, or privileged information must be conspicuously marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act (FOIA) or otherwise. The U.S. Federal Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

If your response contains confidential, proprietary, or privileged information, you must include a cover sheet marked as follows identifying the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this response may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for the purposes described in this RFI DE-FOA-0001326. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

In addition, (1) the header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: “Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure” and (2) every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

EVALUATION AND ADMINISTRATION BY FEDERAL AND NON-FEDERAL PERSONNEL: Federal employees are subject to the non-disclosure requirements of a criminal

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statute, the Trade Secrets Act, 18 USC 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to EERE providing their response to non-Federal parties. Non-Federal parties given access to responses must be subject to an appropriate obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

REQUEST FOR INFORMATION CATEGORIES AND QUESTIONS:

CATEGORY 1: General comments about the proposed Building America research-to-market plan, which incorporates the three integrated technology-to-market roadmaps:

- Are there critical challenges facing the high performance housing industry that are missing from the proposed plan? (provide justification and estimated impacts of solving the additional challenges).
- Suggestions for how to implement the proposed plan to support critical industry partners.

CATEGORY 2: Technology-to-Market Roadmap A: High Performance, Moisture Managed Envelope Systems

- Are there critical research, market, or codes and standards needs missing from the draft roadmap?
- Is the sequence and timing of the draft roadmap activities and objectives realistic and logical?
- What industry organizations are critical to the success of the draft roadmap, and how should they be engaged?
- How can the draft roadmap be improved to better support critical industry needs?
- Other concerns?

CATEGORY 3: Technology-to-Market Roadmap B: Optimal Comfort Systems for Low Load Homes

- Are there critical research, market, or codes and standards needs missing from the draft roadmap?
- Is the sequence and timing of the draft roadmap activities and objectives realistic and logical?
- What industry organizations are critical to the success of the draft roadmap, and how should they be engaged?
- How can the draft roadmap be improved to better support critical industry needs?
- Other concerns?

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CATEGORY 4: Technology-to-Market Roadmap C: Optimal Ventilation Systems and IAQ Solutions for Low Load Homes

- Are there critical research, market, or codes and standards needs missing from the draft roadmap?
- Is the sequence and timing of the draft roadmap activities and objectives realistic and logical?
- What industry organizations are critical to the success of the draft roadmap, and how should they be engaged?
- How can the draft roadmap be improved to better support critical industry needs?
- Other concerns?

REQUEST FOR INFORMATION RESPONSE GUIDELINES: Responses to this RFI must be submitted electronically to BuildingAmericaRFI@ee.doe.gov no later than 5:00pm (ET) on April 30, 2015. Responses must be provided to the email address above as Microsoft Word document attachments, and must be provided as attachments to an email. A separate Word document should be sent for responses to each category, and should be limited to two (2) pages each. In addition, one supporting technical document (e.g., PDF technical report or XLS analysis sheet) is permitted for each response. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Only electronic responses will be accepted.

Please identify your answers by responding to a specific question or topic if possible. Respondents may answer as many or as few questions as they wish.

EERE will not respond to individual submissions or publish publicly a compendium of responses. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.

Respondents are requested to provide the following information at the start of their response to this RFI:

- Company / institution name;
- Company / institution contact;
- Contact's address, phone number, and e-mail address.

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