High Impact Commercial Building Technology Deployment

DATE: March 6, 2014

SUBJECT: Request for Information (RFI)

DESCRIPTION:

The U.S. Department of Energy's (DOE) Building Technologies Office (BTO) is developing a pipeline of high impact, cost-effective, energy saving and underutilized commercial building technologies. This RFI seeks information regarding the development and maintenance of new and existing tools, specifications, case studies and other resources actively deployed by the Commercial Buildings Integration program.

BACKGROUND:

Commercial buildings consume 18 Quads of primary energy annually.[i] Advances in commercial building technologies can enable the cost-effective delivery of new buildings and retrofits that significantly lower commercial building energy consumption. This RFI is for technologies that are ready for market adoption (e.g. within 1 year of market-availability) but are underutilized due to barriers such as perception of risk, gaps in information and data on performance and cost.

This RFI covers existing commercial building integration (CBI) team technology deployment work which will be called the High Impact Technology (HIT) Catalyst. Through the High Impact Technology Catalyst, technologies will be demonstrated based on criteria including:

- Market Demand
- Existing Resources related to the specific technology
- Regulatory Environment
- Manufacturing Capacity
- Cost Effectiveness including Installation, Operations and Maintenance
- Energy Footprint
- Technical Energy Savings Opportunity

Deployment channels such as technology demonstrations, technical and procurement specifications, templates, tools, etc. will be developed and/or updated to increase voluntary uptake of HITs based on technology characteristics, barriers and the state of the market.

Information produced through this RFI will enable CBI to 1) prime the market for high impact technologies currently under development; 2) develop a pipeline of underutilized, high impact technologies ready for deployment; 3) better understand market potential, interest and readiness;

4) connect technology providers with demonstration hosts, distributors, end users, and tools to assist in the acceleration of market uptake.

PURPOSE: The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to cost-effective, market-ready, high impact commercial building technologies, as defined in the criteria above. EERE is specifically interested in information related to available high impact technologies, potential host sites for technology demonstrations and market interest in technologies. This is solely a request for information and not a Funding Opportunity Announcement (FOA). EERE is not accepting applications.

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, 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 request. EERE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that DOE 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 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 #1086. 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 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 DOE 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: Market Information

1. Which commercial buildings stakeholder group do you best represent?
    a. Owner, Investor or Developer
    b. Operator, Building Manager
    c. Occupant, Tenant
    d. Designer, Engineer, Architect, Building Professional
    e. Manufacturer, Dealer, Supplier
    f. Scientist, Researcher
    g. Utility
    h. Government
    i. Trade Association
    j. Financial Institution

k. Service Provider

l. Other (please explain).

2. What categories of commercial building energy saving technologies or strategies are of specific interest to you? Please be as broad or specific as needed. General categories may include: lighting, daylighting, shading, fenestration, envelope measures, building automation, energy management information systems, boilers, chillers, motors, pumps, fans, packaged units, plug load management and control, occupant engagement, process loads/infrastructure, food service equipment, office equipment, audits and retro-commissioning, etc.
3. What barriers and problems exist to including this/these energy saving technologies into your building projects (new and retrofit)?
4. What deployment strategy and/or resources are the most valuable for accelerating the uptake of cost-effective, energy saving technologies? Select all that apply:
    a. Case study reports
    b. Cost and pricing information
    c. Technology/strategy performance information
    d. Recognition by DOE and partners
    e. Sample procurement language
    f. Sample technical specification language
    g. Peer exchange and sharing of best practices
    h. Energy savings calculators
    i. Application guidance
    j. Industry Challenges that encourage innovation
    k. Other (please explain).
5. Please indicate other strategies and/or resources that are valuable for accelerating the uptake of cost-effective, energy saving technologies.
6. How can DOE continue to engage stakeholders to implement high impact technologies in their buildings, including technology demonstrations and technology campaigns?
7. What barriers exist to participation in technology demonstration and deployment programs? How could DOE lower those barriers?

CATEGORY 2: Technology Demonstration Host Sites

DOE seeks to connect technology providers with interested building owners to host technology demonstrations. Through the commercial buildings technology demonstration program, host site representatives commit to supplying access, support, building data and insights to produce lessons learned and enable an overall evaluation of the project.

DOE is not accepting applications related to host sites at this time. Rather, DOE is asking for information only. Hosts will receive: technical assistance in design and installation of the demonstration product; DOE-provided instrumentation for capturing up to 12 months of performance data and other information related to commissioning, weight, noise, O&M issues, etc.; technical assistance to assess the building portfolio for the likelihood that equipment could cost-effectively be deployed at scale; a summary report on performance and non-performance with how-to guidance to facilitate broader adoption within the host's portfolio and by the broader market; and finally, publicity (if desired) or recognition. For more general information on commercial building technology demonstrations, please visit: http://energy.gov/eere/buildings/technology-demonstrations

Please respond with answers to the following if you are interested in hosting a technology demonstration:

- Who is the primary point of contact (name, title, organization, phone, email)?
- Do you have current efficiency project plans that involve replacing equipment?
- Can you provide a formalized commitment by a decision-making authority in your organization to support energy saving projects, ensuring the availability of requisite staff and resources?
- Will you share non-business sensitive information, such as procurement language, cost/pricing data and energy data resulting from the demo for inclusion in public materials?
- Will you participate in publicity and general outreach efforts around the technology demonstration to spur replication by others?
- How many buildings do you own or operate?
- What general business criteria will you use to determine whether or not to deploy high impact technologies broadly within your portfolio should the demonstration be successful?

CATEGORY 3: Technology Providers

PART 1.

DOE seeks to connect technology providers with interested building owners to host technology demonstrations. Through the commercial buildings technology demonstration program, technology providers supply equipment for monitoring/testing and work with the technology demonstration teams to support the demonstration.

Please respond with answers to the following if you are interested in providing a technology for demonstration:

- Did you receive federal funding to support the development of this technology? If so, please describe the amount, duration and source of funding.
- Who is the primary point of contact (name, title, organization, phone, email)?
- Please provide a summary of the technology including targeted pricing/cost-effectiveness, technical energy savings potential, and applicable building sector/type.
- What are the characteristics of ideal demonstration hosts, i.e. ability to share energy data, significant number of pieces of equipment, technical ability staff (plug-and-play lamps vs. design, labor and install for HVAC), funding, other commitments, etc.
- Is this product readily available for purchase on the market?
- What are the barriers to wide market acceptance of this technology?
- Is this technology manufactured in the United States?

PART 2.

DOE's Technology Performance Exchange provides a centralized, Web-based portal for finding and sharing energy performance data for building-related products to increase market adoption of promising energy efficiency and renewable energy technologies. The Technology Performance Exchange provides interested parties—consumers, manufacturers, vendors, modelers, researchers, and utilities—access to product data for use in their assessments and comparisons of building-related products. Individuals who manufacture, supply, test, or evaluate technologies can use data entry forms, or the site's application programming interface (API), to upload product-specific energy performance data. Individuals and organizations that are responsible for assessing product or technology performance can leverage the raw data in the Technology Performance Exchange to (1) reduce evaluation time; and (2) improve the quality of their assessments, increasing the penetration and deployment of energy saving products to market. Currently, the Technology Performance Exchange accepts energy performance data for 17 distinct technology categories:

1. Ductless Heat Pumps: Indoor Units
2. Ductless Heat Pumps: Outdoor Units
3. Gas-Fired Unit Heaters
4. Heat Pump Water Heaters
5. Hot-Water Boilers
6. Inverters
7. Lamp Ballasts

8. Low-Voltage, Dry Type Distribution Transformers
9. Non-SSL Lamps
10. Non-SSL Luminaires
11. Rooftop Units
12. Photovoltaic Modules
13. Positive Displacement Refrigeration Compressors
14. Rotodynamic Pumps
15. SSL Luminaires
16. SSL Replacement Lamps
17. Steam Boilers

At this time, DOE invites manufacturers in these categories to submit product performance data to the Technology Performance Exchange. This can be done manually via the Technology Performance Exchange user interface, accessible at https://performance.nrel.gov, or in an automated manner using the site API (see https://performance.nrel.gov/developers for more information).

RESPONSE GUIDELINES for the REQUEST FOR INFORMATION: Responses to this RFI must be submitted electronically to CBI@go.doe.gov no later than 5:00pm (ET) on **May 30, 2014**. Responses must be provided as attachments to an email. Responses must be provided as a Microsoft Word (.docx) attachment to the email, of no more than two pages in length, 12 point font, 1 inch margins. Only electronic responses will be accepted.

Please identify your answers by making note of the 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.

[i] The Buildings Energy Data Book indicates that the commercial buildings sector consumed 18.11 quadrillion Btu primary energy in 2013, *see* http://buildingsdatabook.eere.energy.gov/TableView.aspx?table=3.1.1. The U.S. Energy Information Administration Annual Energy Outlook 2013 Early Release estimates commercial building energy consumption at between 17.65 and 18.12 quadrillion Btu between 2012 and 2014, *see* http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013ER&subject=0-AEO2013ER&table=2-AEO2013ER&region=1-0&cases=full2012-d020112c,early2013-d102312a.