Fraunhofer USA

U.S. Department of Energy

Building AMERICA

Fraunhofer CSE Named Research Team Leader for U.S. DoE Building America Program

Boston, MA – July 20, 2010 – The Fraunhofer Center for Sustainable Energy Systems (Fraunhofer CSE) today announced that it was selected to serve as a Research Team Leader for the Building America Program. Building America, an industry-driven research program sponsored by the U.S. Department of Energy, aims to accelerate the development and adoption of advanced building energy technologies in new and existing homes. Fraunhofer CSE's team of scientists will focus on applying new technologies to dramatically increase the scale and depth of home energy efficiency retrofits. Specific residential projects in Massachusetts, Texas and Maine will be announced near the end of this year.

"I am delighted that the Fraunhofer-led team has been selected as a Building America Team. This is a testament to our expertise and growing reputation in building energy efficiency research and development," said Kurt Roth, Ph.D., leader of the Building Energy Efficiency Group at CSE. "We have assembled a very talented group with the capability to achieve ambitious goals through applied research and development of energy-efficient building technologies and systems."

In a 2009 report, the U.S. Department of Energy estimated that buildings consume almost 40% of America's energy and 73% of its electricity, making the development and deployment of energy-efficient, durable and comfortable building technologies vital to meeting energy- and carbon-reduction goals over the coming decades. For these reasons, the Fraunhofer CSE Building Energy Efficiency Group works with partners from across the buildings sector to investigate, develop, test, model and demonstrate energy-efficient technologies. The retrofit market holds particular interest to the Group's research goals, as it offers the greatest opportunity to achieve significant reductions in building energy consumption in the near-term.

"Fraunhofer takes a holistic approach to energy retrofits to achieve significant primary energy savings at scale," added Roth. "We look at all aspects of the building - from enhanced building envelope retrofits and advanced controls measures, to the integration of solar technologies with HVAC and water heating, as well as monitoring and performance evaluation of these

technologies. We also study how occupants interact with the building and how their decisions impact energy consumption."

Project Focus

Fraunhofer CSE's team will focus uniquely on Building America's new goal articulated in the Statement of Work (SOW): dramatically increasing the scale and depth of home energy efficiency retrofits. To help achieve this very ambitious goal, CSE has proposed research activities covering the full spectrum of activities outlined in the SOW, including:

1) Applied research and development of energy-efficient building technologies and systems;
2) Deployment and integration of these technologies into homes;
3) In situ monitoring and performance evaluation of these technologies, and
4) Evaluation of home occupant's motivation and working with existing energy efficiency deployment organizations to realize impact at the community scale.

CSE's Research Plan includes significant efforts to achieve significant primary energy savings at scale through:

1) Solar Thermal Integration with HVAC and Water Heating;
2) Advanced Controls Measures and Occupant Feedback, and
3) Enhanced Building Envelope Retrofits, as well as general (design) integration and outreach activities.

Research Partners

- **Dow Corning**: A leading global producer of building materials and facade technology
- **Fraunhofer CSE**: A non-profit applied research and development laboratory dedicated to the commercialization of clean energy technologies
- **Fraunhofer Institute for Solar Energy Systems (ISE)**: The largest solar science research group in Europe, with extensive research into BIPV and other building-related applications
- **Fraunhofer Institute for Building Physics (IBP)**: Europe's leading building science research group, providing access to the latest innovative building technologies
- **Massachusetts Institute of Technology Building Technology Program**: World-class research university with a superior rate of generating innovative start-up companies
- **Owens Corning**: Leading global insulation and building materials manufacturer

Industrial Partners

- **Aspen Aerogel:** Producers of ultra-thin insulation materials
- **Fabral:** Premier supplier of metal roofing and wall systems
- **MicroTek Laboratories:** Developer of encapsulated phase change materials used for insulation
- **Mitsubishi Electric:** A world leader in intelligent air-conditioning, heating, and control technology.

- **National Gypsum**: Supplier of building products and world-leading producer of gypsum board.
- **Phase Change Energy Solutions:** Pioneer in phase change materials for use in insulation board and other residential applications
- **RIMA International**: 24-member trade association of reflective insulation manufacturers
- **VKR Group:** Leading manufacturer of windows, skylights, and solar thermal systems
- **Winter Panel:** Manufacturer of cost-efficient wall panels for private and commercial buildings.

Project Developers

- **Cambridge Design and Development:** Residential housing developer with significant experience in high-quality construction in Boston and Cambridge, MA
- **SGI Ventures:** Developer with extensive experience in innovative residential development in the Austin market
- **Texas Foundation for Innovative Communities:** NPO that develops housing and economic development projects based on a green and innovative vision of the future for Texas

Builders

- **Byggmeister:** Boston-based specialty builder with extensive experience in deep energy retrofit applications to existing homes
- **White Oak Builders:** Major residential building contractor operating in Houston and Austin, Texas

Architects and Mechanical Engineering Firms

- **Barley and Pfeiffer, Architects:** Well-known architectural firm with extensive residential design experience and input into national and city building energy efficiency standards
- **Flack + Kurtz, MEP:** National mechanical and HVAC systems engineering firm with significant experience in residential construction
- **Next Phase Studios:** Boston-based architectural firm with far-reaching experience in innovative residential design based on energy conservation and green building characteristics
- **WBRC Architects/Engineers:** Architectural and engineering firm with significant experience in residential energy conservation design for HUD and private developers
- **Zapotec Energy:** Cambridge-based developer of advanced solar techniques and building integrated solar applications

Research Site

- **Midcoast Regional Redevelopment Authority/Brunswick Naval Air Station:** Managers of BNAS conversion with extensive residential building holdings to be used as a CSE research site

Monitoring and Evaluation Partners

- **Conservation Services Group:** A national organization with extensive experience delivering energy efficiency at scale

- **New Ecology:** Boston-based developer and conservation monitoring and evaluation services group with real estate development expertise
- **Next Step Living:** A residential energy efficiency company providing home energy diagnostics and improvements to the greater New England area

Government Partners

- **Texas State Energy Conservation Office (SECO)**
- **City of Austin, TX, Office of Neighborhood Housing and Community Development (NHCD)**
- **City of Boston, Boston Redevelopment Authority**
- **City of Boston, Environmental and Energy Services**

Further Information

- Building America Program Homepage
- Research Team Press Release