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## Notice of Funding Opportunity

**Title:** Buildings Energy Efficiency Frontiers & Innovation Technologies (BENEFIT)  
**Website:** <https://eere-exchange.energy.gov/Default.aspx#Foaldaff0bc6d-95b0-4aa6-901b-2ef0a53e8f7e>  
**Funding:** Total: \$80,000,000. Maximum awards: \$750K-\$3M, depending on topic.  
**Dates:** Informational Webinar: October 5, 2020  
Concept Papers Due: November 5, 2020  
Full Application Deadline: January 20, 2020

**Summary:** The objective of this Funding Opportunity Announcement (FOA) is to research and develop next-generation building technologies that have the potential for significant energy savings and improved demand flexibility, affordability, and occupant comfort. An additional goal is to advance building construction, remodeling, and retrofit practices, and associated workforces. The 2020 BENEFIT FOA will invest up to \$80 million across 2 topic areas to allow all interested parties to research and develop high-impact technologies and practices that will improve energy productivity, improve flexibility, security and resilience, as well as lower energy costs.

### Project Topic Areas:

Applications will be selected based on evaluation factors such as technical merit and impact.

#### Topic 1: Building Technology Research, Development and Field Validation

The objective of this topic area is to develop and validate high-impact, affordable technologies that will improve energy productivity, flexibility, security and resilience, without negatively impacting occupant comfort. The applicant should also identify positive or negative impacts that the proposed technology and/or approach could have on technology integration.

*Subtopic 1.1: Advancing Innovative Manufacturing and End-of-Life Processing of Efficient Building Energy Technologies*

*Subtopic 1.2: Thermal Storage Research, Development and Field Validation*

*Subtopic 1.3: Heating, Ventilation and Air Conditioning Research, Development and Field Validation*

*Subtopic 1.4: Refrigeration, Water Heating Research, Development and Field Validation*

*Subtopic 1.5: Integrated HVAC, Refrigeration and Water Heating Research, Development and Field Validation*

*Subtopic 1.6: Appliances Research and Development and Field Validation*

*Subtopic 1.7: Lighting Technology Research, Development and Field Validation*

*Subtopic 1.8: Energy and Demand Data, Modeling, and Analytics*

*Subtopic 1.9: Comprehensive Electric Load Optimization*

#### Topic 2: Advanced Building Construction

The Advanced Building Construction Initiative integrates energy efficiency solutions into highly productive U.S. construction practices for new buildings and retrofits. The ABC Initiative aims to help the U.S. construction industry achieve affordable, high-performance, resilient, energy efficient buildings by investing in new technologies that can be produced, and/or practices that can be adopted, cost competitively. The objective of this topic area is to develop and validate high impact technologies, specifically the building envelope, and approaches for manufactured homes and portable classrooms. The applicant should also identify positive or negative impacts that the proposed technology and/or approach could have on technology integration.

*Subtopic 2.1: Mass Produced Highly Efficient Manufactured Homes and Portable Classrooms*

*Subtopic 2.2: Building Envelope Research, Development and Field Validation*

*Subtopic 2.3: Advanced Workforce for Advanced Technology*

### Funding:

EERE expects to make a total of approximately \$80 million of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE may issue one, multiple, or no awards under each topic/subtopic area. EERE anticipates making awards that will run up to 36 months in length, comprised of one or more budget periods. Project continuation will be contingent upon several

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elements, including satisfactory performance and Go/No-Go decision review. Project cost share must be at least 20% of the total allowable costs for research and development projects (i.e., the sum of the government share, including FFRDC costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-federal sources unless otherwise allowed by law. Applications submitted under all subtopics, except subtopic 2.3, must meet the 20% minimum requirement. Subtopic 2.3 does not require cost share by statute.

Topic	Subtopic	Award Duration	Federal \$\$ per award (estimated)	Total Federal Funding (estimated)	Cost Share Minimum
Topic 1	All Subtopics	Up to 36 months	Up to \$3M	\$61M	20%
Topic 2	Subtopics 2.1 – 2.2			\$12M	
	Subtopic 2.3		Up to \$750,000	\$7M	0%
<b>TOTAL</b>				<b>Up to \$80M</b>	

**Project Requirements:**

All applications are expected to identify the baseline technology or approach, describe the current technology or market deficiencies, and characterize/quantify current performance and cost parameters. Where applicable, the applicant should identify any relevant regulations, efficiency standards, building codes or other barriers which impact the proposed technology and/or approach. The applicant should identify any positive or negative impacts that the proposed technology and/or approach could have on technology integration, specifically related to the integration priorities associated with the Advanced Building Construction and Grid-interactive Efficient Buildings initiatives described above. To the extent possible, technology integration should be considered in energy savings, affordability, demand flexibility, and occupant comfort evaluations described below.

All applications should clearly detail a pathway for overcoming the identified technology and market deficiencies through their approach. This includes a thorough discussion of the proposed technical approach including quantified energy metrics, cost characteristics, and impact on occupant comfort and quality of life. Applicants should clearly state all technical assumptions and provide appropriate data, data analysis, and/or modeling/simulation results to support the proposed approach. Key project risks and mitigation strategies should also be detailed.

Applications are expected to address the specific metrics or goals identified in the subtopic area descriptions below. In most subtopic areas, applicants are expected to address energy savings (technical energy savings potential), affordability (cost of conserved energy), demand flexibility, and occupant comfort. Guidance on energy savings and affordability calculations and addressing demand flexibility and occupant comfort considerations are provided.

**Eligible Applicants:**

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime recipient or subrecipient. For-profit entities, educational institutions, and nonprofits that are incorporated (or otherwise formed) under the laws of a particular state or territory of the United States and have a physical location for business operations in the United States are eligible to apply for funding as a prime recipient or subrecipient. A foreign entity may receive funding as a subrecipient. State, local, and tribal government entities are eligible to apply for funding as a prime recipient or subrecipient. DOE/NNSA FFRDCs are eligible to apply for funding as a prime or subrecipient for subtopics 1.2, 1.7, and 2.2. For all other subtopics, DOE/NNSA FFRDCs are only eligible to apply as a subrecipient. Non-DOE/NNSA FFRDCs are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a prime recipient or subrecipient. Unincorporated Consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime recipient/consortium representative.