U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

BUILDING TECHNOLOGIES OFFICE FY 2015 BUDGET AT-A-GLANCE

Buildings use more than 70% of the electrical energy consumed in the United States. Homes and commercial buildings consume 40% of the nation's total energy with an annual energy bill of more than $400 billion. These energy bills can be cost-effectively reduced by 20-50% or more through various energy efficiency technologies and techniques. The Building Technologies Office will continue to develop and demonstrate advanced building efficiency technologies and practices to make buildings in the United States more efficient, affordable, and comfortable.

What We Do

The Building Technologies Office uses an integrated, three-pronged approach to deliver energy and consumer cost savings:

- ✓ **Research, Development, and Demonstration** of innovative technologies and techniques that enable energy-efficient building systems;
- ✓ **Market Stimulation** activities to overcome barriers to "speed and scale" technology adoption; and
- ✓ **Standards and Codes** that use transparent public processes to expand the portfolio of energy efficient appliances, equipment, and buildings.

Program Goals/Metrics

- The Building Technologies Office goal is to develop and promote the adoption of cost-effective technologies and practices that, when fully deployed, will reduce U.S. building-related energy use by 50% (from a 2010 AEO baseline).
- Emerging Technologies will develop technologies that enable a reduction of 70% in lighting, 60% in water heating, 20% HVAC, building envelope and appliances, and 30% in transactive controls.
- Commercial Buildings will support the goal to demonstrate, in all climate zones and in building types representing 80% of building energy use, that it is cost effective to reduce the energy required to operate commercial buildings by 20% by 2020.
- Residential Buildings will support the goal to demonstrate energy efficient technologies and techniques that, when fully deployed, will reduce building related energy use by 30% and 25%, respectively, in new and existing residential buildings by 2020.
- Equipment and Building Standards will reduce building source energy use by 10% and carbon pollution by at least 3 billion metric tons by 2030.

FY 2015 Priorities

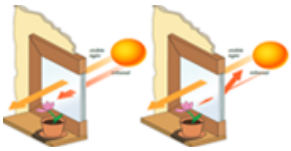
- **Emerging Technologies** will pursue R&D in non-vapor compression HVAC technology, transactive controls, and grid integration to optimize energy performance as well as support energy-related transactions outside the building envelope.
- **Commercial Buildings** will demonstrate a 2% per year portfolio-wide energy savings in buildings operated by Better Buildings industry partners and accelerate the market uptake and use of building performance tools.
- **Residential Buildings** will focus on development of high value technology solutions for new and existing homes through the Building America and Better Buildings Neighborhood Programs.
- **Equipment and Building Standards** will continue to meet all of its mandated deadlines for covered appliances and equipment and enforce its existing standards. Building Energy Codes will fulfill DOE's statutory role relative to model energy codes, support implementation of updated codes that provide up to 30% savings compared to adopting states, and prioritize code compliance.

(Dollars in Thousands)	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Commercial Buildings Integration	33,956	30,782	28,000
Emerging Technologies	58,599	55,862	79,000
Penn State Consortium for Building Energy Innovation	22,843	9,994	10,000
Equipment and Buildings Standards	61,525	55,840	69,000
Residential Buildings Integration	27,678	24,390	23,000
NREL User Facility	0	1,000	2,700
Total, Building Technologies	**204,601**	**177,868**	**211,700**

Key Accomplishments

Emerging Technologies:

- Trilogy™ 40 series, a ground-source integrated heat pump unit (ClimateMaster, ORNL) using variable speed technology, is up to 30% more efficient than other ground-source heat pumps and saves 55-65% of annual energy use. The product will be manufactured in Oklahoma City, Oklahoma.



- Heliotrope Universal Smart Window Coating (Heliotrope Technologies Inc/LBNL) saves more than 20% of annual energy use for commercial buildings compared to ASHRAE 90.1-2007 windows.

Commercial Building Integration:

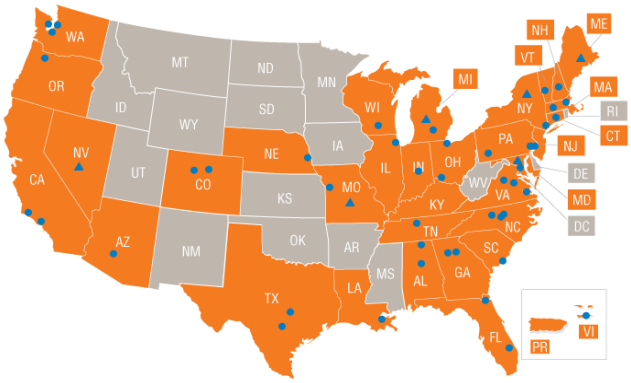
- Reached more than 300 Better Buildings Challenge Partners and Better Buildings Alliance Members representing over 12 billion square feet of building space.
- Released three new technical specifications that could reduce energy use by over 500 trillion Btu per year and save more than $5 billion.
- Launched the Lighting Energy Efficiency in Parking (LEEP) campaign with industry partners, which commits more than 110 million square feet of space to be retrofitted using DOE lighting and controls specifications.

Equipment and Building Standards:

- Distribution Transformer Standards will save over $17 billion in electricity bills over 30 years.
- External Power Supply Standards will save over $10 billion in electricity bills over the 30 years.
- Since 2010, there have been more than 250,000 REScheck and COMcheck downloads and a 30% improvement in existing codes. Since 2008, codes for commercial and residential buildings have realized more than 30% savings.

Residential Building Integration:

- Better Buildings Neighborhood Program: 100,000 homes retrofitted, resulting in 15-30% energy savings.
- Home Energy Score: over 30 partner locations and 6,000 energy audits in FY13.
- Released Building America Solution Center, a dynamic new tool that allows residential building professionals full and simple access to a wealth of building science and energy efficiency information.



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