

DOE ENERGY EFFICIENCY PROGRAMS: BENEFITS TO UTAH

SOUTHWEST ENERGY EFFICIENCY PROJECT

The U.S. Department of Energy (DOE) manages energy efficiency programs involving both research and development (R&D) and programs to encourage adoption of energy efficiency technologies and best practices. These programs help Utah businesses and consumers save energy and money, and they add jobs through businesses that sell, install, and maintain energy efficiency products and services. According to DOE's 2017 U.S. Energy and Employment Report, energy efficiency provides 31,100 jobs in Utah.

The table below shows the main categories of DOE's energy efficiency programs, and the proposed levels of funding for FY 2018 under both the House and Senate Appropriations bills. How does the DOE directly benefit Utah businesses and residents? Read on for some of the highlights.

ENERGY EFFICIENCY PROVIDES 31,100 JOBS IN UTAH



DOE Energy Efficiency Programs	FY 2017 Budget (thou \$)	2018 White House Request (thou \$)	2018 House Approp. Bill (thou \$)	House % Reduction vs. 2017	2018 Senate Approp. Bill (thou \$)	Senate % Reduction vs. 2017
Advanced Manufacturing	306,959	82,000	125,000	59%	277,988	9%
Building Technologies	257,500	82,000	102,000	60%	252,000	2%
Vehicle Technologies	199,141	67,500	91,406	54%	195,000	2%
Weatherization Assistance	225,000	0	225,000	0%	212,000	6%
Total for EE programs above	988,600	231,500	543,406	45%	936,988	5%

BTO PROGRAMS

The Building Technologies Office (BTO) spearheads several programs including the Building America Program, the Building Energy Codes Program, and Appliance and Equipment Efficiency Standards, Emerging Technologies, and Residential and Commercial Building Integration.

Building America

The Building America Program conducts research on energy efficiency innovations to benefit the residential building industry and the public. The program helps push these innovations into the market through demonstrations, information dissemination, and voluntary residential energy efficiency programs. Through adopting energy efficiency improvements advanced by the Building America program:

- U.S. households save **\$54 billion annually** on their utility bills, with **\$170 of homeowner savings for each \$1** of Building America revenue spent
- Highly efficient new homes generate millions of dollars per year in additional construction revenue and generate thousands of new jobs nationally

Building Energy Codes Program

The DOE Building Energy Codes Program contributes to energy savings in buildings by supporting the implementation of the model building energy codes. The program accomplishes this by: 1) Participating in industry processes to develop and update codes—analyzing energy and cost savings associated with code updates and improvements; 2) providing technical assistance to states and localities—helping them adopt and implement better codes; and 3) supporting energy code compliance through providing training and tools—ensuring that intended savings are realized by U.S. home and business owners. DOE estimates that adopting the latest model energy codes would result in these benefits by 2030:

- Save Utah businesses and homes at least **\$120 million per year**
- Reduce Utah's energy consumption in residential and commercial buildings by **14.3 trillion Btu per year** or more (about 4.5% savings)

Appliance and Equipment Efficiency Standards

The federal government has adopted minimum energy standards for more than 60 products, representing about 90% of home energy use, 60% of commercial building energy use, and 30% of industrial energy use. DOE periodically reviews and updates the standards and test procedures. In Utah, appliance and equipment standards adopted to date achieve these benefits:

- Utah businesses save a total of **\$150 million per year**
- A typical Utah household saves about **\$440 per year** (about 12% of its annual utility bill)

The national energy efficiency standards completed through 2016 will result in the following cumulative savings through 2020 for the U.S.:

- **71 quadrillion Btu** (quads) of energy savings
- **\$1 trillion** of net economic benefits to consumers and businesses

R&D PROGRAMS - ADVANCED MANUFACTURING AND BUILDING TECHNOLOGIES

Both the Advanced Manufacturing Office (AMO) and Building Technologies Office (BTO) support R&D of new energy efficiency technologies, with the main goal of helping to introduce new technologies to the market that will improve energy efficiency in buildings and industry, savings businesses and consumers money on energy costs. In many cases the new technologies are manufactured by entrepreneurial start-up companies, creating new jobs in addition to contributing to energy and cost savings.

AMO PROGRAMS

The Advanced Manufacturing Office (AMO) runs several programs including the Industrial Assessment Centers and the Combined Heat and Power (CHP) Technical Assistance Partnerships (TAPs). The CHP TAPs provide free assistance to industrial and commercial facilities in evaluating applications of combined heat and power, which can help businesses save money, improve reliability, and reduce their carbon footprint.

Industrial Assessment Centers

Industrial Assessment Centers (IACs) are operated by 28 universities throughout the U.S., including the University of Utah in Salt Lake City, and Arizona State University in Tempe, AZ. The IACs provide free energy assessments to small and medium-size manufacturers, and provide training to engineering students. Since 1984, the IACs in the Southwest achieved the following results:

- **118 students** trained
- **1150 assessments** completed (most of these for Colorado manufacturers)
- **4.9 trillion Btu** of energy savings from implemented recommendations
- **\$57 million** in cost savings to the industrial facilities

ICON Fitness case study. The Texas A&M University Industrial Assessment Center performed a free energy assessment for the ICON Fitness manufacturing plant in Logan, UT in 2013. The IAC made ten recommendations, and ICON implemented nine of them, achieving annual energy cost savings of \$129,000, with implementation costs of only \$91,500.

VEHICLE TECHNOLOGIES

The Vehicle Technologies Office (VTO) supports research, development (R&D), and deployment of efficient transportation technologies that improve energy efficiency, improve fuel economy, and reduce petroleum consumption. These technologies include advanced batteries and electric drive systems, lightweight materials, advanced combustion engines, alternative fuels, and energy efficient mobility systems. VTO also supports implementation programs such as Clean Cities.

Clean Cities

The Clean Cities program supports state and regional actions to reduce petroleum consumption through the use of alternative fuels and improved efficiency. The Utah Clean Cities coalition achieved the following results, through improved efficiency and through promoting the adoption of alternative-fuel vehicles (mainly natural gas, ethanol, and electricity).

Clean Cities Coalition	Petroleum Savings (gallon equivalents)	Avoided CO ₂ Emissions (tons)	Alternative Fuel Stations
Utah Clean Cities Coalition	11,740,000	51,700	480

Many businesses and local governments support the Utah Clean Cities Coalition by becoming Members, listed [here](#).

WEATHERIZATION ASSISTANCE

The DOE's weatherization assistance program provides cost-effective energy savings and health benefits to low-income American families and supports jobs. In Utah from 2010-2017, the program has achieved the following results:

- **5,200** Utah homes received energy efficiency upgrades
- **\$1.4 million per year** in energy cost savings to low-income Utah homes
- **152 billion Btu per year** in energy savings

Here are some highlights of annual benefits at the national level:

- **\$340 million** in energy cost savings
- **\$280** in average cost savings for a single-family home
- **8,500 jobs** supported
- **Benefit-to-cost ratio of 4.1** including energy savings and health and safety benefits
- **Savings-to-investment ratio of 1.4** (\$1.40 in savings for every \$1 spent)

This fact sheet was produced by the Southwest Energy Efficiency Project (SWEEP), a non-profit, nonpartisan organization that promotes greater energy efficiency in AZ, CO, NM, NV, UT, and WY. (See www.swenergy.org.) Please send any questions or comments to Neil Kolwey at nkolwey@swenergy.org; ph: 303-499-0213.