

NATIONAL EVALUATION: SUMMARY OF RESULTS

The U.S. Department of Energy (DOE) is pleased to share the summarized results of the National Evaluation of the Energy Efficiency and Conservation Block Grant (EECBG) Program, a national program funded one-time under the American Recovery and Reinvestment Act (ARRA) of 2009. The EECBG Program provided grants and technical assistance to local governments, states, tribes and territories to support a wide variety of energy efficiency and renewable energy activities. The National Evaluation was commissioned by DOE’s Weatherization and Intergovernmental Programs Office, which managed the EECBG Program, and carried out by an independent evaluator team lead by DNV-GL, with oversight from Oak Ridge National Laboratory and its advisors. The evaluation analyzed the Program between 2011 and 2015 and culminated in the findings outlined here.



KEY EVALUATION OUTCOMES AND METRICS

Energy Savings/ Renewable Generation

- Combined Energy Savings from all EECBG Activities: 409 million source MMBtu* for the 2009 to 2050 period
- Generated 4.2 MMBtu from on-site Renewable Energy Projects

Labor Impacts

- Produced a net total job gain of 62,900 job years for the Broad Program Areas (BPAs) studied
- Job gains represent approximately \$36,260 per job created based on \$2.280 billion in funding for the evaluated BPAs.

Avoided Carbon Emissions

- Avoided 25.7 million metric tons of carbon equivalent due to energy savings and renewable generation.
- Saved \$1.7 billion in social costs of carbon due to energy savings alone and an additional \$62 million in social costs avoided from displaced energy as a result of renewable generation.

Bill Savings and Cost-Effectiveness

- Produced \$5.2 billion of total cumulative savings on energy bills, 70% of which were realized by residential consumers, 29% in the public institutional sector, and 1% the commercial and industrial sectors.

*Million British thermal units (MMBtu)

EVALUATION APPROACH

The National Evaluation focused on Broad Program Area (BPAs) that represented about 80 percent of EECBG funding during the study period. BPAs are sets of related projects and activities that deliver energy efficiency and renewable energy services in similar ways. The BPAs studied were: Energy Efficiency Retrofits; Financial Incentives; Buildings and Facilities; Lighting; On-site Renewable Technology; Energy Efficiency and Conservation Strategy. The BPA-specific impacts for each outcome are presented in this section for the 2009 – 2050 study period:

TABLE 1. LIFETIME EECBG-ATTRIBUTABLE ENERGY SAVINGS, BY BROAD PROGRAM AREAS (BPA)

	Estimated total energy savings (million source BTUs)	Estimated energy savings as percent of total saving in all BPAs
Energy Efficiency Retrofits	70.88 million	17.3%
Financial Incentives	235.89 million	57.6%
Buildings and Facilities	29.98 million	7.3%
Lighting	70.59 million	17.2%
On-site Renewable Technology	68,223	<1%
Energy Efficiency and Conservation Strategy	1.85 million	<1%
Total	409.27 million	100%

Estimates may not sum to the estimates reported in the “Total” row and column due to rounding or suppression of estimates that round to zero.

TABLE 2. LIFETIME EECBG-ATTRIBUTABLE RENEWABLE ENERGY GENERATION, BY BPA

	Estimated total renewable generation (million source BTUs)	Estimated renewable generation as percent of total generation in all BPAs
Energy Efficiency Retrofits	156,594	3.7%
Financial Incentives	770,852	18.2%
Buildings and Facilities	N/A	N/A
Lighting	N/A	N/A
On-site Renewable Technology	3.31 million	78.1%
Energy Efficiency and Conservation Strategy	2,352	.01%
Total	4,245,875	100%

**COST EFFECTIVENESS MEASURES: RAC TEST
(ANNUAL ENERGY SAVINGS PER \$1,000 IN EECBG
EXPENDITURES)**

<i>Metrics</i>	<i>RAC Test Result- Building*</i>	<i>RAC Test Result- System*</i>	<i>Bill Savings (\$Thousands)</i>
Energy Efficiency Retrofits	5.18	5.20	\$748,188
Financial Incentives (with loan principal)	9.76	9.92	\$2.74 million
Financial Incentives (without loan principal)	14.97	15.20	\$2.74 million
Buildings and Facilities	13.70	13.70	\$260,377
Lighting	39.17	39.17	\$1.31 million
On-site Renewable Technology	0.09	2.92	\$123,550
Energy Efficiency and Conservation Strategy	2.86	2.87	\$21,192
Total (with loan principal)	9.64	10.47	\$5.20 million
Total (without loan principal)	9.83	10.67	\$5.20 million

**COST EFFECTIVENESS MEASURES: PRESENT
VALUE TEST (COMPARES LIFETIME PARTICIPANT
BILL SAVINGS TO EXPENDITURES)**

<i>Discount Rate</i>	<i>0.70%</i>	<i>2.70%</i>	<i>4.70%</i>
Energy Efficiency Retrofits	0.66	0.56	0.49
Financial Incentives (with loan principal)	4.95	3.77	2.95
Financial Incentives (without loan principal)	7.61	5.79	4.51
Buildings and Facilities	1.18	1.05	0.94
Lighting	6.37	5.38	4.60
On-site Renewable Technology	0.72	0.57	0.47
Energy Efficiency and Conservation Strategy	0.31	0.27	0.23
Total (with loan principal)	2.18	1.76	1.44
Total (without loan principal)	2.37	1.91	1.57

* Building perspective – Evaluates cost effectiveness of energy savings and renewable generation.

* System perspective – Evaluates cost effectiveness of energy savings and conventional energy displaced by renewable generation.