



Black Hills Energy - Colorado Electric & Natural Gas Energy Efficiency Plans

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Black Hills Energy - Colorado

Natural Gas Energy Efficiency Plan



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Residential Programs

- Changes and new offerings for the 2012-2014 Plan

Existing Residential Programs

Audits

- Free walkthrough energy audit
- Home Performance with ENERGY STAR

Space & Water Heating

- Furnace and Boiler Replacement
- Water Heater Replacement
- Innovative Space & Water Heating Technologies
- Setback Thermostat & Furnace/Boiler Maintenance

Envelope Measures Retrofit

- Insulation and Infiltration

Residential Program

Audits

- Free walkthrough energy audit
- Home Performance with ENERGY STAR

What's Changing?

- Add an on-line audit tool
- Modify the two tiered audit program with an ENERGY STAR component to a three tiered audit program.
- Eliminate Home Performance with ENERGY STAR component
- Offer setback thermostats

Residential Program

Space & Water Heating

- Prescriptive rebates for:
 - Furnace and Boiler Replacement
 - Water Heater Replacement
 - Innovative Space & Water Heating Technologies
 - Setback Thermostat & Furnace/Boiler Maintenance

What's Changing?

- Increased marketing/promotion and outreach efforts
- Measures and rebate levels did not change

Residential Program

Envelope Measures Retrofit

- Incentives for:
 - Wall, ceiling and foundation insulation
 - Other building shell measures

What's Changing?

- Home energy audit is no longer a prerequisite to this program
- Additional incentive for blower door testing

Residential Program

New Construction

1. Prescriptive Standard:

- Builder must install a specified set of energy efficiency measures (similar to ENERGY STAR Prescriptive Path)
- \$1,500 rebate
- Inspection required

2. Performance Path:

- Builder must meet specified energy performance targets (HERS score)
- HERS inspection required
 - **Tier 1 HERS:** \$1,500 rebate (similar to ENERGY STAR Performance Path)
 - **Tier 2 HERS:** \$5,000 rebate
 - Higher efficiency measures, lower HERS score required



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Non-Residential Programs

- Changes and new offerings for the 2012-2014 Plan



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Existing Non-Residential Programs

Small Commercial Audit

- Assess and recommend energy-efficiency opportunities

Prescriptive Rebate

- Space and Water Heating
- Commercial Cooking Equipment

Custom Rebate

- Covers any measures not specified in the Prescriptive Rebate Program
- Buys down energy-efficient upgrades to a two-year payback or covers up to one-half of the incremental cost of the equipment

New Construction

- Free energy design assistance and cash incentives



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Non-Residential Program: Audits

Large Facility Assessment Component

- Cost-shared funding for large commercial customers
- Energy audit includes:
 - Desk study review of utility billing history and site conditions
 - On-site energy audit with limited application of metering and diagnostic testing
 - Customized, site-specific facility report outlining potential energy efficiency measures
- Matches facility recommendations to existing BHE non-residential program incentives

Special Programs

- The 2012-2014 Plan



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Special Programs

Low-Income

- Weatherization
 - Funds the weatherization of low-income households
- Affordable Housing (New Construction)
 - Increased incentives for low-income new construction that qualifies for the ENERGY STAR label
- Weatherization Teams
 - Volunteers offer weatherization measures & services to low-income households

School-Based Energy Education

- Offers curriculum and energy efficiency kits to students and teachers



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Black Hills Energy Colorado Electric

- **Preliminary Program Design**



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Black Hills Energy Colorado Electric 2012-2014 Program Design

Current Programs

Residential Programs

- High Efficiency Lighting
- High Efficiency Cooling
- Refrigerator Recycling
- New Construction
- Direct Load Control Pilot

Commercial and Industrial

- Prescriptive
- Custom
- Commissioning
- New Construction
- Industrial

Special Programs

- School Based Energy Education
- Low Income Assistance Program

Proposed Programs

Residential Programs

- High Efficiency Lighting
- High Efficiency Cooling
- Appliance Recycling
- High Efficiency Appliances
- On-line Audit

Commercial and Industrial

- Prescriptive
- Small Business Direct Lighting
- Custom
- New Construction

Special Programs

- School Based Energy Education
- Low Income Assistance Program



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Residential Programs



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Residential High Efficiency Lighting Program

Program Description: Provides rebates for CFL and LED light bulbs

Change from Current Program: The addition of LED light bulb rebates

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Res High Efficiency Lighting	2.54		101,000	111,000	121,000
CFLs	2.26	\$1/bulb	100,000	110,000	120,000
LEDs	1.12	\$10/bulb	1,000	1,000	1,000

Note: Participants are counted as the number of bulbs incentivized



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Residential High Efficiency Cooling

Program Description: Provide prescriptive rebates for high efficiency cooling equipment

Change from Current Program: The addition of Ground Source Heat Pumps, adding multiple tiers to Central Air Conditioner Rebates, and allowing the participation of new construction

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Res High Efficiency Cooling	2.11		585	660	735
Central ASHP SEER>=15	1.18	\$400	20	25	30
Ground Source Heat Pump	1.04	\$1,200	20	25	30
Central AC SEER>=15, EER>=12.5	1.01	\$400	40	50	60
Central AC SEER>=16	1.12	\$500	40	50	60
Evaporative Cooler >2,500 CFM	2.33	\$200	425	450	475
Evap Cooler Media Saturation >85%	2.23	\$400	40	60	80

Residential Appliance Recycling

Program Description: Provide incentives for residential customers to turn in their second (fully functional) refrigerator, freezer, or air conditioner

Change from Current Program: The inclusion of Air Conditioners for recycling

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Incentive	Participants	Participants	Participants
Res Appliance Recycling	1.91		400	435	470
Refrigerator Recycle	1.84	\$50	300	325	350
Freezers Recycle	1.17	\$50	50	55	60
Air Conditioners Recycle	2.91	\$50	50	55	60

Residential High Efficiency Appliances

Program Description: Provide rebates for the purchase of high efficiency home appliances

Changes from Current Program: New Program added to incentivize residential customers to replace current appliances

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Res High Efficiency Appliances	1.30		400	455	470
ENERGY STAR Refrigerator	1.51	\$25	200	225	230
ENERGY STAR Standard Dishwasher	1.04	\$25	100	115	120
ENERGY STAR Compact Dishwasher	1.07	\$25	100	115	120

Residential Online Audit

Program Description: Provide an online tool for residential customers to assess the energy efficiency of their home and provide information for making simple energy-savings changes

Change from Current Program: New Program added to educate residential customers on their energy usage and provide low to no cost information on reducing usage

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Residential Online Audit	7.16	N/A	1,000	1,250	1,400

Commercial and Industrial Programs



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C&I Prescriptive

Program Description: Provide prescriptive rebates for specified measures to commercial and industrial customers. For many measure rebates vary by equipment size or number of fixtures

Changes from Current Program: The addition of Evaporative Coolers, Lighting De-Lamping, Energy Management Systems, and LED Lighting

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
C&I Prescriptive	1.89		1,112	1,238	1,324
Evaporative Cooler	1.74	\$3,500	140	150	150
Energy Management System	1.02	\$7,500	12	13	14
CAC 15 SEER	1.20	\$73-\$92 /ton	50	60	70
Air Source Heat Pump	1.22	\$64/ton	50	60	70
Ground Source Heat Pump	1.13	\$70-\$480/ton	25	35	45
Motors	1.67	\$10-\$600/motor	25	35	45
Air Cooled Chiller	2.20	\$20/ton	40	50	50
Water Cooled Chiller	1.62	\$5-\$12/ton	40	50	50
Lighting (T12 to T8)	1.53	\$5-\$75/fixture	180	185	190
Lighting (400 MH to 320 PSMH)	4.17	\$17-\$45/fixture	180	185	190
Lighting (400 MH to HIF T5HO)	5.55	\$40-\$75/fixture	180	185	190
LED Lighting	2.59	\$25/fixture	50	60	70
Lighting De-Lamping	2.16	\$12/fixture	75	100	110
Variable Frequency Drives	2.40	\$30/HP	65	70	80



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Small Business Direct Lighting

Program Description: Provide enhanced incentives to small and medium business customers for lighting projects. Incentives will cover 60% of total project costs

Change from Current Program: New program added to target small and medium business participation

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Small Business Direct Lighting	1.28		300	325	345
SBDI-Small Business	1.26	60% of Cost	175	200	215
SBDI-Medium Business	1.23	60% of Cost	125	125	130

C&I Custom

Program Description: Custom rebate program for the installation of cost-effective energy efficiency measures. Rebates are based on 50% of the incremental cost or \$0.30 per kWh saved

Change from Current Program: No change from current program

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
C&I Custom	2.72	Custom	25	30	35

C&I New Construction

Program Description: Custom rebate program for the design and construction LEED green buildings. Incentives are based on 50% of the energy modeling cost for the design piece and construction incentives are based on a percentage of savings above Code

Change from Current Program: No change from current program

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
C&I New Construction	1.04	Custom	8	10	12

Special Programs



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School Based Energy Education

Program Description: The program provides energy saving education to middle school students and energy savings kits that include energy efficiency measures and additional energy saving education materials.

Change from Current Program: No change from current program.

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
School Based Energy Education Program	1.74	\$0	1,500	1,500	1,500

Low-Income Assistance Program

Program Description: Pays the full cost of measures that reduce electric cooling, refrigeration and lighting to income-qualified customers.

Change from Current Program: No change from current program.

Black Hills Energy Colorado Electric			PY1 - 2012	PY2 - 2013	PY3 - 2014
Program Name	TRC	Rebate	Participants	Participants	Participants
Low Income Assistance Program	0.06	\$0	1,095	1,110	1,125
LI-CFLs	0.03	\$0	1,000	1,000	1,000
LI-Refrigerator/Freezer replacements	0.08	\$0	70	80	90
LI-Evaporative cooler installations	0.23	\$0	25	30	35

Discussion and Comments



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