

RESIDENTIAL HIGH EFFICIENCY CAC PROGRAM

PROGRAM DESCRIPTION

The Residential High Efficiency CAC Program will encourage residential customers, owners of residential rental property and builders of residential structures to purchase and install energy-efficient central air conditioning and heat pumps by providing financial incentives to offset a portion of the equipment's higher initial cost. The program's long-range goal is to acquire cost-effective demand-side resources and to encourage contractors/distributors to use energy efficiency as a marketing tool, thereby stocking and selling more efficient units and moving the entire CAC and heat pump market toward greater energy efficiency.

Incentives will be set at approximately 50% of incremental cost. Incentives will be available for systems that meet the following criteria:

Split Central Air Conditioner

SEER greater than or equal to 15

EER greater than or equal to 12.5

Air Source Heat Pump

SEER greater than or equal to 15

HSPF greater than or equal to 8.5

An additional feature of the program will be to offer training in Manual J calculations and System Charging and Airflow for HVAC contractors. Manual J is the industry standard residential load calculation method. The training offers step-by-step examples of properly sizing equipment and also addresses principles of heat transfer. The training teaches HVAC contractors to accurately perform and document cooling load calculations and reduces over-sizing. The System Charging and Airflow course addresses airflow and charging procedures and standards and includes hands-on training in the use of testing equipment.

Manual J training is currently made available to contractors and installers in southwest Missouri by the state heat pump organization. Empire will try to expand the participation in Manual J training by offering additional training opportunities and the phasing in of requiring the calculation as a condition of participation in this rebate program. This training will be offered a minimum of once annually. Beginning 2009, installers must have completed this, or similar, training for the homeowners/builders to qualify for the rebate.

To improve the overall operation of the central air units, training will also be made available for system charging and airflow. This training will also be offered a minimum of once annually. Beginning 2009, installers must have completed this, or similar, training for the homeowners/builders to qualify for the rebate.

Two focus groups, one on each side of the Missouri service territory, composed of contractors and installers are planned to provide input into the development of the training process. This will allow the training to focus on the real needs of the group and to assist in buy-in of the program.

ESTIMATE OF PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	431.60	659,880
2	539.50	824,850
3 – 5 (per year)	647.40	989,820

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
1.12	1.22	2.46	0.47	1.46

ESTIMATE OF PARTICIPATION

Years	Participation
1	520
2	650
3 – 5 (per year)	780

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	\$0	\$40,000	\$20,000	\$208,000		\$268,000
2	\$0	\$42,500	\$20,000	\$260,000		\$322,500
3	\$0	\$45,000	\$20,000	\$312,000	\$37,700	\$414,700
4	\$0	\$47,500	\$20,000	\$312,000		\$379,500
5	\$0	\$50,000	\$20,000	\$312,000		\$382,000

The average incentive is assumed to be \$400. Program delivery costs include rebate processing and contractor training courses in Manual J calculations and System Charging and Airflow.

EVALUATION

Budget assumes 10% of Year 3 total project cost. The evaluation may include a sample of on-site inspections. Spot metering and runtime data may also be collected to verify the connected load and full load hour estimates used in engineering analysis. A process and impact evaluation may be conducted at the beginning of the third year of implementation unless advanced or delayed by the CPC.