

## **Results of HomE geothermal and air source heat pump incentives documented by IL electric cooperatives**

The Association of IL Electric Cooperatives (AIEC) coordinated a major residential energy efficiency program called HomE for the Illinois electric cooperatives from May 2010 to October 2011, incenting a variety of efficiency measures. The AIEC is the statewide trade association representing 25 Illinois distribution electric cooperatives, which serve 300,000-plus consumers across all or parts of 90 of Illinois' 102 counties.

HomE utilized \$2.5 million in federal American Reinvestment and Recovery Act (ARRA) funds, which were distributed by the Department of Energy through state energy offices. HomE administrators reported directly to the IL State Energy Office (within IL DCEO). In addition to monthly progress and financial reports to the state energy office, a series of quarterly metrics were reported to DCEO and DOE while the program was underway. Finally, the HomE program underwent a thorough week-long federal DOE audit in the fall of 2011.

The HomE programs provided incentive funding for residential energy audits, insulation and weatherization, heat pump/furnace/air conditioning upgrades, and heat pump water heaters. Nearly 3,500 residential audits were performed on cooperative members' homes, and ARRA funding incented efficiency upgrades at 85-plus percent of the homes that were audited.

### **Geothermal heat pumps promoted through HomE**

HomE incented 943 geothermal, or ground-source heat pump systems. These systems cost, on average, \$15,829.77 apiece. They averaged four tons per installation, for an average cost of \$3,957.44 per ton of installed geothermal capacity. All geothermal systems were required to meet Energy Star minimum qualifications in order to receive an incentive. These systems were mainly horizontal and vertical closed loop installations. There was a \$1,500 rebate incentive for installation of a geothermal heat pump.... There was just one rebate per cooperative member – installations with multiple geothermal units were eligible for just one rebate.

The vast majority of the systems were retrofit projects – just 79 went into newly constructed homes. The remaining 864 geothermal systems were installed in existing homes, replacing an existing heating/cooling system.

The HomE program documented the types of heating/cooling systems replaced by the geothermal system. By far, the most popular replacement was the traditional combination of a gas furnace or boiler, with a central air cooling system. Of the 864 retrofits, more than half (444) went into homes with this combination of gas/electricity for heating and cooling. (The data wasn't broken down between hot water boilers and forced air furnaces.)

An additional 92 systems replaced old air-source heat pumps and 65 more replaced resistance electric heat – typically baseboard/ceiling cable/electric furnaces.

The program allowed members replacing older geothermal heat pumps with new geothermal systems to receive an incentive – 235 members took advantage of this one-time upgrade opportunity.

### ***943 HomE geothermal installations***

382 replaced LP furnace/boiler  
62 replaced NG furnace/boiler  
235 replaced another geothermal system  
92 replaced air-source heat pump  
65 replaced electric heat  
27 replaced “wood or other” heating system.  
1 replaced fuel oil  
79 were new construction

### **Air Source Heat Pumps promoted through HomE**

HomE also incented 718 air-source heat pump systems. These ASHP systems cost, on average, \$7,658.24 apiece. They averaged 3.22 tons per installation, for an average cost of \$2,378.33 per ton of installed ASHP capacity. All ASHPs were required to meet a minimum SEER rating of 16 in order to receive an incentive. There was a \$1,000 rebate incentive for installation of qualifying air-source heat pump.

The vast majority of the ASHP incentives were retrofit projects – just 12 were for new construction. Some 341 ASHP installations replaced traditional gas furnace/boiler and central air conditioner systems. Another 254 replaced existing, old ASHPs and 112 replaced electric heat/central air systems. Some 42 other systems replaced a variety of miscellaneous heating/cooling systems, including wood boilers, fuel oil, etc.

### ***718 Air Source Heat Pump systems installations***

341 replaced traditional LP or NG furnace/boiler and central air  
226 replaced an existing air-source heat pump  
103 replaced electric heat  
12 were new construction  
36 replaced a variety of other miscellaneous heating/cooling combinations

For more information contact:

John Freitag, VP-Operations  
Assn. of IL Electric Cooperatives, Springfield  
[jfreitag@aiec.coop](mailto:jfreitag@aiec.coop) – 217-241-7973

