

# NEWS *from the* REC

The Northwestern Rural Electric Co-operative Association, Inc.  
PO Box 207, Cambridge Springs, PA 16403-0207

[www.northwesternrec.com](http://www.northwesternrec.com) • E-mail: [northwesternrec@northwesternrec.com](mailto:northwesternrec@northwesternrec.com) • Phone: 1.800.472.7910 • Fax: 1.814.398.8064

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## Heat Pump Booster - A Cost Effective Choice

Source: [www.steffes.com](http://www.steffes.com); Steffes Corporation is a leading manufacturer located in Dickinson, North Dakota. Steffes specializes in a variety of products for agricultural, recreational, electrical, and industrial markets.

Heat pump systems are known as one of the most efficient methods of heating and cooling. Utilizing a heat pump booster, such as the Comfort Plus unit by Steffes Corp., with a heat pump allows the pump's high efficiency to be combined with an off-peak electric rate (see related article on page 2) making this system one of the lowest operating cost options available.

In heat pump applications, the booster replaces the resistance strip heat, which is typically required as a supplement or backup to heat pump systems, with low cost, off-peak stored heat. As outside temperatures drop, the stored heat in the booster is used in conjunction with the pump's heating capacity to satisfy personal comfort needs. When the demand for heat is at the point when the heat pump alone cannot satisfy the heating needs, the stored heat is used to supplement the heat pump.



Comfort Plus - seen here as a heat pump booster; however, it can be a stand alone unit as well.

### The heat pump & booster benefits:

- Provides great comfort 24 hours a day
- Provides for a highly efficient, low cost heating & cooling system all in one
- Optimizes system performance by allowing the heat pump's efficiency to be fully utilized
- Eliminates the cool discharge air temperatures associated with heat pump systems during low outdoor temperatures

This combination, when used with off-peak electric rates, is the most economical heating and cooling system available.

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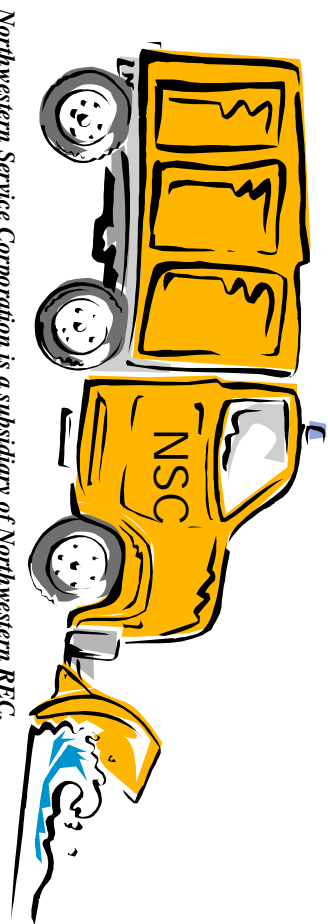
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NSC, P. O. Box 104, Cambridge Springs, PA 16403

**Rich Wunderley**  
Engineering/Field Services Superintendent  
1.814.398.5366

**Linda King**  
Business Development Manager  
1.814.398.5303

**Marilyn Jones**  
Engineering & Operations Supervisor  
1.814.398.5310

**Mary Mulligan-Haines**  
Communications/Marketing Manager  
1.814.398.5307

**Amy W. Fuller**  
News from the REC Editor  
1.814.398.5364

**Contacts:**

Northwestern REC  
PO Box 207  
Cambridge Springs, PA 16403



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## Co-op Happenings

### Fall Remodeling Show

Northwestern REC will have a display at the Builder's Association Fall Remodeling Show, to be held at the Family First Sports Park in Erie, on October 3-5. The Co-op booth will focus on electric heating options. ♦

### Wiring Courses at the Co-op

Beginning in January 2004, Northwestern REC will offer basic residential wiring courses to its members. Courses will be held in the evenings at the Co-op headquarters in Cambridge Springs. For more information, contact Ken Lindberg, Human Resource Manager, at 1.800.472.7910. ♦

### News from the REC online

To receive this newsletter electronically, send an e-mail request to:

fuller@northwesternrec.com.

## Co-op Off Peak Heat Rate

A **better energy value** for members who want all the conveniences of electric heat at an affordable price is the Co-op's Interruptible Space Heating Rate.

### Off-Peak Heating Rate (*The Heat You Can't Beat*)

- \$22.00 monthly cost of service
- \$.09043 per kWh for non-controlled usage
- \$.052096 per kWh for controlled usage
- Off-peak rate may also be applied to water heater, dryer & other appliances hooked into the panel box.

All that members have to do is:

1. Install wiring for an off-peak panel box.
2. Connect electric heating systems (electric thermal storage and resistance baseboard), & other appliances to the off-peak panel. *Members must have an approved backup heating system to receive this rate.*
3. Call the Co-op to connect the Load Control Receiver (LCR), which allows the Co-op to control the off-peak panel during peaking conditions.
4. **Sit back and enjoy the 46.5% savings.**

For more information regarding the Off-Peak Heat Rate, contact Field Services at 1.800.473.3567. ♦

(Continued from page 1)

### How the System Works

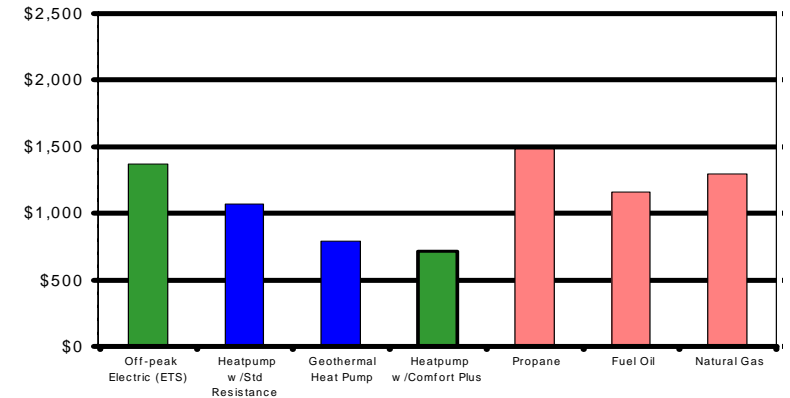
1. Room thermostat is set to desired comfort level. If the room temperature drops below this point, the system turns on.
2. The heat pump's outdoor compressor unit comes on and warms the A-coil in the return air duct of the pump. At the same time, the booster's supply air blower is turned on.
3. The supply air blower draws air from the home (shown at 68°F) across the air filter and the heat pump's A-coil, extracting heat from the coil as it passes through.
4. A sensor monitors air temperature after passing the A-coil. If the air temperature is warm enough to provide comfort to the homeowner (generally 90°F or higher), the supply air blower simply delivers the warm heat into the home through the supply air duct. If air temperature after passing the heat pump coil is below a comfortable level (generally less than 90°F), the booster's core blower will modulate low cost, "Off-Peak" stored heat into the duct stream (generally 90°F or higher) delivering comfort heat into the home.

Since heat pumps generally have an operating efficiency of 150% - 300% or greater (depending on outdoor temperature), the Steffes Comfort Plus system first utilizes the heating ability the heat pump offers. If the heat pump doesn't have the ability to satisfy comfort and space heating needs, the Comfort Plus system starts to work with the heat pump utilizing low cost, off-peak energy to ensure comfort for the user at all times. Combining the heat pump efficiency with the "off-peak" booster yields very low operating costs and great comfort for the end user.

For more information regarding heat pump boosters, please contact Linda King, Business Development Manager, at 1.800.472.7910. ♦

## Estimated Annual Heating Cost Comparison

(numbers based on a 2,000 sq. ft. home & family of four)

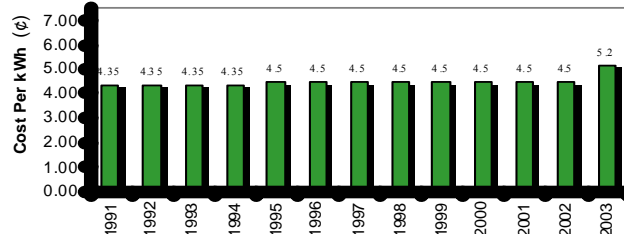


**Geothermal vs. heat pump w/ booster** - When you compare the numbers, the heat pump/Comfort Plus option beats geothermal systems hands down. Even with water heater costs included (not seen here), the heat pump and booster combo is the most economical system out there.

## Co-op Rates Remain Stable While Other Fuel Prices Fluctuate

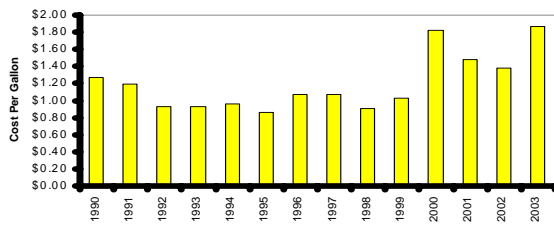
At Northwestern REC, the people aren't the only thing you can count on, you can also count on stable electric rates. When comparing the Co-op's off-peak rate to propane and oil prices, Northwestern REC's rates have remained level for well over 10 years:

### Northwestern Off-Peak Rate

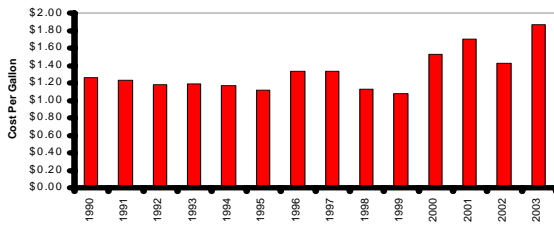


**Above:** Over the past 12 years, Northwestern REC has kept its off-peak heat rate level, slightly raising the rate only twice. **Left:** Fuel oil & propane prices in Pennsylvania fluctuate significantly each year. Data taken from the U.S. Dept. of Energy.

Historical Oil Prices in PA  
Source US DOE



Historical Propane Prices in PA  
Source US DOE



## New Construction Tools from EPA

The Environmental Protection Agency has developed a set of tools to help builders sell the ENERGY STAR Advanced Lighting Package to their customers. These tools include:



Advanced Lighting Package Brochure to educate customers on the advantages of this package.



Advanced Lighting Package Flip Chart and Savings Look-up Tool to illustrate the potential savings that could be realized.



Excel-based Interactive Savings Calculator for builders to use in developing Advanced Lighting Packages.

For those interested in developing a New Construction Lighting program or expanding a current program to include the use of these tools, please contact David Shiller of the EPA at 1.202.564.6246. ♦