



PORTABLE ELECTRIC HEATERS

Learning how they work helps you use them effectively



Tim Stewart,
CEO/Manager

A number of portable and hard-wired electric heaters have been introduced to the marketplace in response to high home heating fuel costs. Don't be misled by cleverly worded ads that suggest one heater may be more efficient than a competitor's. All electric heaters, except ultra high-efficiency heat pumps, provide 100 percent efficiency, and watt for watt, cost the same to operate.

Three main heater designs

The first step is to understand that there are three main heater categories. The first category is the high-temperature radiant style. They are characterized by the glowing red heating elements and shiny mirrored reflector behind the coils. Radiant heaters don't attempt to heat the air, but rely on "beaming" their warmth directly to people or objects in the room. Just like the sun's warmth, it can be a very pleasing form of heat.

The second category is the natural convection style, which transfers heat

differently. Instead of using red-hot coils, these heaters distribute the same amount of heat over a wider surface of the heater. This allows the flow of air over their surface (natural convection) to transfer heat to the air. Often seen in a long, slender baseboard design, these heaters are warm to the touch but not hot enough to burn you. Other convection heaters are shaped like old-fashioned cast iron radiators, as found in historic buildings. An oil-like fluid inside spreads the heat around the surface. On a watt-for-watt equivalent, natural convection heaters put out just as much warmth, but you don't feel the intense heat as from a radiant design.

The third category, fan-forced heaters, relies on a blower to push air over the heating coils. Designed like a "mini furnace," these heaters must warm the air in the room to increase comfort. Unlike the natural convection style, they don't rely on a large surface area to transfer their heat to the air. A quick clarification — small fans are sometimes used in radiant heaters too, as a way to circulate the air. Don't let the presence of the fan fool you; if most of the heat radiates out from visible glowing coils, it's a radiant heater.

ity going in. Therefore, any two heaters with a rating of 1,500 watts on the nameplate will deliver the same amount of heat, no matter what they look like. To calculate the hourly cost of operating an electric heater, consider the following:

$$A \text{ (Amps)} \times V \text{ (Volts)} = W \text{ (watts)}$$

$$W \text{ (watts)} / 1,000 \times (\text{hours of use/day}) \times (\text{number of days used}) \times (\text{electric rate})$$

Example using 12.5 amp space heater

$$12.5 \text{ amps} \times 120 \text{ volts} = 1,500 \text{ watts}$$

$$1,500 \text{ watts} / 1,000 \times 4 \text{ hours per day} \times 30 \text{ days} \times .1070 / \text{kwh} = \$19.26 / \text{month}$$

What is different about each heater is the method used to transfer the warmth from the heating elements to the person or objects that need it. Any of the three portable electric heater types can allow room-by-room variation in temperature. This zonal heating method can save energy, but only by lowering the setting on the home's central heating thermostat. Then in the occupied room, a space heater is used to boost the temperature to a comfortable level.

If you wish to utilize electric heat, we encourage you to employ our load management system to shift on-peak usage to off-peak usage. If you have an automatic backup heating source or storage heat system, you could qualify for a reduced dual fuel rate. By utilizing this approach, you not only save money, but you also help keep costs down by avoiding peak times.—*Source: National Food and Energy Council; Richard Hiatt, author*



What does it all mean?

Each of the three designs described here uses a process called "electric resistance heating." Because all electric heaters use this same process, they all have the same efficiency — 100 percent. There are no losses. Whatever the heater's shape or size, the amount of heat coming out is the same as the amount of electric-





THANKS FOR JOINING US FOR MEMBER APPRECIATION DAY!

Cooperative members gathered the morning of Saturday, September 21, for the Annual Member Appreciation Day Pancake Breakfast/Kick Off to Co-op Month event. The breakfast included pancakes, eggs, sausage, and fresh cheese curds. The breakfast was just the beginning of the many activities that were available for members of all ages.

The kids enjoyed giant inflatables, pumpkin crafts, and picture frame crafting (with their own picture to put in it). Marshfield Medical Center-Neillsville participated with safety information, which included door prizes for the kids. They also provided health-screening information for the adults.

Greenwood EMS and Fire Department were on hand with their equipment on display and performed blood-pressure checks. The Greenwood Police Department was present to do a “Drug Take Back” event, which was very successful.

A food drive for the local food pantry was included in the activities and provided a great way to include the 7th Cooper-



ative Principle, Concern for Community, into this cooperative event.

This year’s food pantry donations of 230 pounds were donated to the Colby food pantry. The donations are rotated to a different community each year with hopes of reaching as many as possible in our service area.

Power Pac from Marshfield donated the use of a ranger to assist members who needed help getting from the park-

ing areas to the breakfast location. The ranger was also useful when setting up and taking down signs for parking.

CEO Tim Stewart and several of the directors were on hand to answer questions regarding the all-electric vehicle recently purchased by Clark Electric Appliance and Satellite, Inc. and visit with members while they enjoyed the morning.

Clark Electric Appliance and Satellite was there with HVAC information as well as information on other products offered through their department.

Congratulations, Door Prize Winners!

Kids 12 and under were asked to guess the weight of a huge pumpkin. The actual weight was 116 pounds. Tyrell Burkholder from Loyal and Lindsey Potocnik from Owen each received a gift card as winners of the kid’s door prize for having the closest guess.

Thank you to everyone who joined us for this year’s event, and we hope to see you again next year!



ENERGY ASSISTANCE AVAILABLE FOR QUALIFYING MEMBERS

The heating season has now begun. It's important for you to make every attempt to keep current on your electric bill. We understand that things do happen that put financial burdens on people. Certain government organizations can offer heating assistance or point you in the direction of a group that can help.

The Wisconsin Home Energy Assistance Program (WHEAP) administers the federally funded Low Income Home Energy Assistance Program (LIHEAP) and Public Benefits Energy Assistance Program. LIHEAP and its related services help more than 230,000 Wisconsin households annually.

Eligibility

You may be eligible for weatherization services if:

- You received benefits from WHEAP or your gross income for the last three months is equal to or less than 60 percent of Wisconsin's state median income (SMI) for your family size.
- Your dwelling/apartment has not

been weatherized before.

- Your household meets certain priorities that may include a high energy burden or use, an elderly or disabled member or a child under six.

For more information and application details, please contact your local office:

- Clark County** 715-743-5233
Department of Social Services
- Chippewa County** 715-726-7862
Department of Human Services/
Economic Support
- Marathon County** 715-842-3111
Energy Services, Inc.
- Taylor County** 715-748-6123
Human Services Department
- Wood County**
Department of Social Services
Wisconsin Rapids office. 715-421-8600
Marshfield office 715-387-6374
- Jackson County** 715-284-4301
Department of Health & Human Services

To learn more or to locate your local agency, call toll free 1-866-HEATWIS (432-8947) or visit homeenergyplus.gov. Other Resources for Energy

INCOME GUIDELINES FOR THE 2019-2020 HOME ENERGY PLUS PROGRAM YEAR

60 percent of state median income guidelines

Household Size	3 Month Income	Annual Income
1	\$ 7,168.25	\$28,673
2	\$ 9,374.00	\$37,496
3	\$11,579.50	\$46,318
4	\$13,785.25	\$55,141
5	\$15,991.00	\$63,964
6	\$18,196.50	\$72,786
7	\$18,610.00	\$74,440
8	\$19,023.75	\$76,095

and Weatherization Programs—CEC
Website: www.ccecoop.com, click the Bill Payment Tab and then the energy assistant link; **Focus on Energy Targeted Home Performance with ENERGY STAR®:** 1-800-762-7077 or visit www.focusonenergy.com; **Keep Wisconsin Warm Fund – Bill Pay Assistance:** 1-800-981-WARM (9276) or visit www.kwwf.org. (Source: Wisconsin Department of Administration Brochure)

GEOTHERMAL

When COMFORT Matters

Looking for an efficient, cost-effective and environmentally friendly heating and cooling system? A geothermal heat pump is the greenest system available. Geothermal systems don't emit carbon dioxide, carbon monoxide, or other greenhouse gasses that can be harmful to the environment or, more importantly, your family. Save money and rest easy knowing your family will be comfortable and safe.



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for your heating system
check-up at our
SPECIAL FALL RATE




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DAYLIGHT SAVING TIME ENDS NOVEMBER 3

If you are on our Time-of-Day Rate, you probably have a time clock controlling devices. Remember to switch the time clock on these devices back one hour as Daylight Savings Time ends on Sunday, November 3. It is important that your time clocks are reset to avoid using electricity during peak times, resulting in a higher-than-normal electric bill. Clark Electric Cooperative's Time-of-Day Rate can save you money on your electric bill; however, you must be willing and able to shift your electric usage around so you can utilize the lower cost of electricity.

For more information on incentive rates such as Time-of-Day or special heating rates, contact our office or visit our website at www.ccecoop.com.





IN BRIEF

Carbon footprint of power plants now lower than vehicles, EPA says

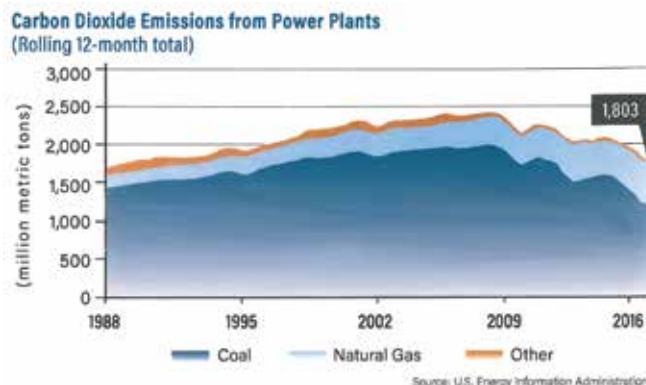
Carbon dioxide emissions from electricity generation in the United States last year fell below those from the transportation section, the first time that has occurred since the late 1970s, according to the U.S. Energy Information Administration (EIA). From October 2015 through September 2016, carbon dioxide emissions from transportation came in at 1,803 million metric tons for power plants.

Overall, EIA adds that power sector carbon dioxide emissions dropped an average 2.8 percent annually between 2007 and 2015—due to greater amounts of natural gas, hydropower, wind, and solar generation coming on-line and a decline in coal use—while those from

transportation rose an average of 1.8 percent per year as increased travel and shipping outpaced efficiency gains.

In addition, the agency noted that although coal- and natural gas-fired facilities produced roughly the same amount of generation during 2016, their shares of power sector carbon emissions were 61 percent and 31 percent, respectively, reflecting the much higher carbon content of coal. The year also saw a slew

of coal plant retirements, with EIA pegging roughly 30 percent to the federal Mercury and Air Toxic Standards rule going into effect.



LOAD MANAGEMENT TEST NOVEMBER 20

Please be advised that the Winter Preparedness Test for Interruptible Heat (Dual Fuel) Members is scheduled for Wednesday, November 20. This load control test is performed in advance of the winter Full Load Control season to ensure member familiarity with the control sequence and to ensure that backup heating systems have been validated for proper function.

During the test, residential Interruptible Heat load classes (2, 2W, & 4B) will be controlled as follows:

Time	Control Status
5:00 p.m.	Control start
5:05 p.m.	All loads interrupted (2,2W,4B)
8:30 p.m.	Class 4B loads restored
9:00 p.m.	Class 2 and 2W loads begin diversified restoral
10:00 p.m.	Class 2 and 2W loads fully restored

Each year, a test of the load management system is conducted for members of the Dual Fuel program. This year, the test will take place on Wednesday, November 20. The electric heat will be turned off at 5:00 p.m. and will be turned back on starting at 8:30 p.m., with everyone's electric heat scheduled to be back on by 10:00 p.m.

If you experience any problems during this test, or if you have any questions regarding the test, contact Clark Electric Cooperative, 714-267-6188 or 800-272-6188.

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PER MONTH
\$59.99/mo. after 3 months

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Viasat™

After 150 GB of data usage, we may prioritize your data behind other customers during network congestion. Minimum 24-month service term. Equipment lease fee is \$7.95/mo. and taxes apply. Speeds are "up to," are not guaranteed and will vary. Service is not available in all areas. Offer may be changed or withdrawn at any time. Viasat is a registered service mark of Viasat, Inc.

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