



Michael Keyser  
CEO/General Manager

## Keyser's Corner

# Making Your Co-op Experience Worry-Free

BARC Electric has introduced a number of options and enhancements that allow you to relax and interact with us in the way you prefer.

As CEO, the nature of my job centers around complexity. Issues that necessitate my involvement are often complicated, requiring research, data and analysis. Decisions that a CEO makes usually are not straightforward and requires choices with their own unique set of consequences. So when I get home from work, I like things to be as simple as possible.

I want your BARC experience to be equally “worry-free.” We have combined technology with the imagination of our employees to develop options and enhancements that enable you to interact with us in the way you prefer — including automating nearly anything you would need to do.

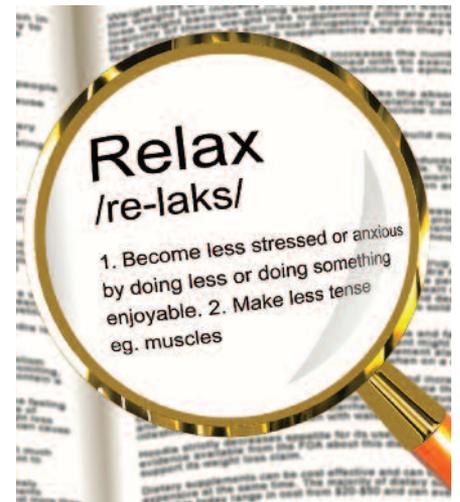
Our marquee tool under the Worry-Free Program is BARC Mobile, our mobile app

for Apple and Android devices. It provides complete functionality, enabling you to report outages, pay your bill, monitor usage, and set alerts and reminders. Because BARC Mobile is connected to your account number, reporting outages via the app is far more accurate and faster than reporting over the phone. I encourage everyone to switch to reporting outages via BARC Mobile.

We also offer a web-based Customer Portal, accessible through our website. Consider it BARC Mobile's big brother. It has all the functionality of BARC Mobile in a web-based interface.

Of course, simplifying your life includes paying bills, and we have developed a number of options to make things easier. We now offer payment methods through BARC Mobile, the Customer Portal, and E-check. We also offer Auto Pay, a program that automatically drafts the bank account of your choosing, while still providing you with a monthly statement so you can monitor usage.

If you enjoy working with a monthly budget to help structure your financial activities, our Worry-Free Billing program may be right for you. Each month we average the preceding 12 months of your electric use and calculate an average. That is amount we bill you for. This process has the effect of smoothing out weather-related changes in consumption, providing a bill amount that remains nearly flat. It will



vary slightly each month but not to the extend a normal bill would.

In order to be sure these programs are serving your needs, we welcome feedback and input. We appreciate knowing when something isn't working right, recommendations for enhancements, or new ideas altogether. So please let us know when you have an idea for service improvement. You can call any member service representative at (800) 846-2272, send us a private message through Facebook, or email us at [co-op@barcelectric.com](mailto:co-op@barcelectric.com).

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CEO/General Manager  
Michael Keyser

*BARC Electric Cooperative is an equal  
opportunity provider and employer.*

# How Many Advertisements Do We See Each Day?

Proof that we live in an information age is no further away than the mass of messages and demands for our attention. Want to know how many add to your daily deluge? This article might be of interest.

Posted online April 15, 2014, 12:30 pm, by sharilee, under Advertising.

I am appalled at the amount of marketing data being randomly asserted without any research backing it up. How many people has the internet turned into babbling idiots looking for their 15 minutes of fame by citing arbitrarily inflated, shock-factor numbers?

This came to my attention again this weekend as I was reading a Tweet from a trusted marketing friend. He referenced a HubSpot blog post, "How to Use Storytelling to Cut Through the B2B Content Clutter." (How's that for a

keyword-stuffed blog title? Lol) There's a lot of interesting data in the infographic that goes with the article. But I became suspicious of all the data once I saw one data point that is way out of line. It said, "It's estimated we see 5,000 marketing messages per day."

In putting together the data for my TEDx WPI talk, Psychology, Neuroscience, and Behavioral Economics: Why Most People Don't Get Marketing, I did a lot of secondary research, including on that very data point. From all the information I read, that 5,000 number is a gross exaggeration and there is no primary research to back it up. To see the wide range of numbers, see



## Information transmission rates of the senses

Sensory system	Bits per second
eyes	10,000,000
skin	1,000,000
ears	100,000
smell	100,000
taste	1,000

this Google Answers post from 2002 (<http://answers.google.com/answers/threadview?id=56750>). Guesses range as high as 20,000 marketing messages per day.

Let's look at this from the bottom up: If we assume we get about 8 hours of sleep each day, that leaves 57,600 awake seconds per day. To see 5,000 ads/branding messages per day, we would have to see one every 11.52 seconds.

Even if those ads/brands are within eyesight, the reality is our brains see very few of them. Our senses are bombarded with over 11 million bits of data every SECOND. The average person's working memory can handle 40-50 bits, max. That means we ignore 10,999,950 bits of data every second we are awake.

So let's be reasonable. I'm still researching the answer, but my best guess is we see **300-700 marketing messages per day**, including the ad overload we get from the internet and video gaming.

Stay tuned. I'll be back with more data!

Btw, two of my new favorite marketing books are: *Decoded: The Science Behind Why We Buy* by Phil Barden and *Contagious: Why Things Catch On* by Jonah Berger.

Source: [blog.telesian.com/how-many-advertisements-do-we-see-each-day](http://blog.telesian.com/how-many-advertisements-do-we-see-each-day)

## Scenes from BARC's 2016 Annual Meeting



Left: Board President Keith Swisher opens the annual meeting.

Right: General Manager Mike Keyser writes information from a member. Below: Members and guests enjoy fellowship before the meeting.



# Pros and Cons of Heat Pump Water Heaters

by Tom Tate

A major consumer of electricity in today's homes is the water heater. Because of how electric water heaters work, using electric-resistance elements, these units max out in efficiency at about 94 percent. As the government and industry seek ways to reduce energy use and the resulting carbon emissions, they have turned their attention to the electric water heater. After lengthy study, the Department of Energy issued rules governing the efficiency of electric water heaters that went into effect in 2015. See the table<sup>1</sup> below for the changes. Notice the jump in efficiency requirements for larger electric water heaters? Enter the heat pump water heater (HPWH).

Heat pumps have been in use for general home heating and cooling since their invention in the 1940s by Robert C. Webber<sup>2</sup>. When the oil embargo of the 1970s brought the need for improved efficiency to the forefront, heat pumps became an important source of increased energy efficiency in the heating, ventilating, and air conditioning (HVAC) arena.

Heat pumps operate by using compressors, refrigerant, heat exchangers, and the

difference in outside air temperature versus indoor temps to produce heat and cooling for homes and businesses. These units historically have been most successful in areas with moderate winter temperatures, although advances in technology are making use in cold climates more feasible.

So, how does an HPWH function and what are its advantages and disadvantages? In short, the HPWH absorbs heat from the surrounding air, using it to heat water within the tank. Because the HPWH uses heat pump technology, it can be up to 2.5 times more efficient than a traditional

PROS	CONS
Efficiency – as much as 2.5 times higher than an electric-resistance alternative.	Upfront cost – \$900+
Cools surrounding space in summer making the area more comfortable.	Noise – the compressor will make a noticeable noise. Insulating the mechanical room can reduce this but also reduces the amount of warm air for the unit's use.
Can use waste heat from central furnace in winter.	Makes heating system work harder in winter because it generates cold air while operating.
No elements to replace.	Physical size of HPWH can be greater than a resistance electric alternative.
May qualify for \$300 Federal Tax Credit in 2016 <sup>3</sup> .	Slow recovery may be a problem when demand for water is high. Families with high demands should consider larger size in number of gallons.
Saves money, about \$330 savings per year for a family of 4 depending on water use and electricity price. This savings rate can provide a 2-3 year payback on the cost of the tank.	Back-up resistance electric heat is used to compensate for lower surrounding air temperatures or as a "Boost" mode to speed recovery <sup>4</sup> .

## Increasing EF Requirements for Water Heaters

GAS	Up to 55 Gallon Capacity				Greater than 55 Gallon Capacity		
	Tankless	30	40	50	60	65	75
Rated Storage Vol. (Gallons)							
Current Standard	.62	.61	.59	.58	.56	.55	.53
2015 Standard	.82	.63	.62	.60	.75	.75	.74

ELECTRIC	20-55 Gallon Capacity				Greater than 55 Gallon Capacity		
	20	30	40	50	65	80	120
Rated Storage Vol. (Gallons)							
Current Standard	.94	.93	.92	.90	.88	.86	.81
2015 Standard	.95	.95	.95	.95	1.98	1.97	1.92

resistance electric water heater. This means it will cost you less to produce hot water for your home and reduce carbon emissions.

The adjacent table details the key advantages and disadvantages of the HPWH. As with heat pumps for general space conditioning, the HPWH will provide greater year-round savings in moderate climates.

Like any new application of a technology, the HPWH will benefit from steady improvements over time. They are undeniably more efficient than electric-resistance water heaters and will pay for themselves in a reasonable amount of time (2-3 years or so). However, they may not be the right choice in every situation and climate. If your water heater is over 10 years old, you should be looking at a replacement anyway to avoid the risk of water damage should the tank fail. Take the time to weigh the pros and cons of the HPWH as a replacement and, if it is right for you, it is a choice that will pay dividends on your budget and in contributing to a reduction in carbon emissions.

*Tom Tate writes about a variety of topics of interest to BARC Electric Cooperative and its members.*

<sup>1</sup>[www.rheem.com/products/water\\_heating/NAECA/](http://www.rheem.com/products/water_heating/NAECA/)  
<sup>2</sup>[www.ehow.com/about\\_6682179\\_history-heat-pump.html](http://www.ehow.com/about_6682179_history-heat-pump.html)  
<sup>3</sup>[www.energystar.gov/products/water\\_heaters/high\\_efficiency\\_electric\\_storage\\_water\\_heaters](http://www.energystar.gov/products/water_heaters/high_efficiency_electric_storage_water_heaters)  
<sup>4</sup>[www.greenbuildingadvisor.com/blogs/dept/musings/heat-pump-water-heaters-come-age](http://www.greenbuildingadvisor.com/blogs/dept/musings/heat-pump-water-heaters-come-age)

#### Further references

[www.ehow.com/about\\_6682179\\_history-heat-pump.html](http://www.ehow.com/about_6682179_history-heat-pump.html) Robert C. Webber, an American inventor, is credited with building the first heat pump during the late 1940s. Webber got the idea for the heat pump by accident when he was experimenting with his deep freezer, and burned his hand after unintentionally touching the outlet pipes of the cooling system. The burning of his hands gave him ideas for the basic mechanics of how he would build the heat pump.

[www.buildinggreen.com/blog/heat-pump-water-heaters-cold-climates-pros-and-cons](http://www.buildinggreen.com/blog/heat-pump-water-heaters-cold-climates-pros-and-cons)  
[homeenergypros.lbl.gov/video/what-is-a-heat-pump-water-heater](http://homeenergypros.lbl.gov/video/what-is-a-heat-pump-water-heater)

[www.rheem.com/products/water\\_heating/NAECA/](http://www.rheem.com/products/water_heating/NAECA/) The U.S. Department of Energy (DOE), as part of the National Appliance Energy Conservation Act (NAECA), issued Final Rule energy efficiency mandates in April 2010. While these mandates only apply to products manufactured for sale in the U.S., Canada will soon implement similar increases in efficiency standards. These far-reaching new requirements will have important impacts on water heating manufacturers, distributors, contractors and homeowners.

[www.energystar.gov/products/water\\_heaters/high\\_efficiency\\_electric\\_storage\\_water\\_heaters](http://www.energystar.gov/products/water_heaters/high_efficiency_electric_storage_water_heaters)  
[www.youtube.com/watch?v=uyn5RPqSPic&feature=youtu.be](http://www.youtube.com/watch?v=uyn5RPqSPic&feature=youtu.be)  
[www.greenbuildingadvisor.com/blogs/dept/musings/heat-pump-water-heaters-come-age](http://www.greenbuildingadvisor.com/blogs/dept/musings/heat-pump-water-heaters-come-age)

# Fall Hiking Gadget

by Tom Tate

**G**rowing up in the Blue Ridge of Virginia, I have to say fall is my favorite season. The crisp days, clear blue skies, beautiful colors, and earthy smell. I love hiking on such days and fortunately, besides getting exercise and fresh air, gadgets abound for hiking. For this article, I plan to focus on one that makes any hike easier, the staff.

Over the years, my staff has evolved from a tree branch I collected during the hike, to a repurposed broom handle, to a nicely cut hardwood staff that is now adorned with numerous badges and medallions collected on my jaunts. A staff provides extra balance when traversing tricky terrain, is an aid when toiling up a steep slope, is quite handy for pointing out items of interest, makes short work of pesky weeds that dare to cross your path, and adds a sense of security. Not bad for a simple piece of wood.

Today, there are numerous options to the wooden staff. Aluminum is the most popular alternative due to its combination of strength and light weight. Some are collapsible to allow for easy transportation. Many offer a range of tips for use in different conditions; snow, mud, rain and dry. You can even get them with a compass or internal compartments for storing hiking "stuff."

But, my favorite (currently on my 2016 wish list) is a bit more elaborate. It is a handmade, multi-part staff made from black-anodized hardened aluminum and has an impressive array of options. I am referring to the Crawford Survival Staff,



made by Crawford Knives, a well-known custom knife company ([www.crawfordknives.com/SURVIVAL%20STAFF%20PAGE%201.htm](http://www.crawfordknives.com/SURVIVAL%20STAFF%20PAGE%201.htm)).

The staff is not inexpensive, base package priced at \$294.95. But here is what you receive for your hard-earned cash:

**Custom hand-ground 440c blade.** (Screws in and out of the handle so you can leave it out if it is illegal where you will be using it.) \* Long tube body (blow gun) (walking stick). \* Short tube body (baton or swagger stick). \* Head (aluminum standard, steel optional). \* Bottom tip with steel point, (rubber tip included). \* Threaded tube connector. \* Soft rubber handle. \* Mushroom cap (for walking stick) with a built-in wrist thong. \* 6 Blow Gun Darts (Blow guns may not be legal in your area, know your laws before using).

It is a DIY kit. Put all the sections together to create a 57" tall hiking staff. Disassemble the hiking staff and make a cane, a swagger stick (who doesn't have a hankering to carry one of these?), spear, sword and so on. Plus, there are a bunch of other accessories: slingshot, camera mount (make a monopod), rifle rest, right-angle head for a more traditional cane, survival tubes that fit inside the body, survival kit, and more.

So, if hiking, trekking, backpacking or simple walks around the block are to your liking, add a little panache and, dare I say, swagger, with the addition of a Crawford Survival Staff. You'll be well served by what to all appearances is an exceptional product and the envy of your walking/hiking/trekking buddies.



Tina Glenn

## TINA's Tastings

### NAN GLENN'S HOT DOG CHILI

3 lbs. ground turkey or ground beef	1½ tsp. chili powder
3 Tbsp. brown sugar	¼ cup vinegar
2 Tbsp. paprika	1 cup tomato juice
4 Tbsp. Worcestershire sauce	½ cup ketchup
1½ tsp. salt	1 cup water
2 tsp. dry mustard	

Simmer all ingredients, except meat for ½ hour. Then add meat that has been cooked and crumbled. Simmer for 3 hours. Top 80 hot dogs.

*Please share your recipes for possible publication by sending them to Tina Glenn at BARC Electric Cooperative, P.O. Box 264, Millboro, VA 24460.*