

# They're *knocking* at your door

*New rules are coming to your home to stay*

*By Tracie Bettenhausen*

After years of service, your water heater goes kaput. There's no helping it now. So, you start your research. It doesn't take long to find out things have gotten a lot more expensive, much more expensive than you would've guessed.

Why? Because it's 2015, and a new rule passed by the U.S.

Department of Energy says if you're buying an electric water heater 55 gallons or larger, it must be 200 percent efficient, as compared to your last one which was 92 percent efficient. It makes sense then that the new water heater is also 200 percent more expensive.

You want your appliances to be energy efficient, but this is a tough one. Having hot water just got more expensive really quickly. And as you learn more, other household necessities are going the same way.

## Heating

Maybe it's not the water heater on your mind. Maybe you're building a new home and were hoping to put in electric baseboard heat. Guess what – that option was almost made a lot more difficult to choose in 2010.

"They were going to greatly restrict the homeowner's ability to install electric resistance heating in their home," says Chris Baumgartner, manager of member services at Basin Electric.

"They" is the International Code Council (ICC). Baumgartner says in October the ICC held its 2010 Annual Conference and Group B Final Action Hearings. One of their action items:

Depending on the amount of insulation and air changes per hour in your home, you could be barred from installing resistance heating and be forced to install a ground-source heat pump.

"Heat pumps are great technology, we love them," says Chad Reisenauer, key accounts/energy conservation coordinator at

Basin Electric, "but they are more expensive to put in. Some folks may want to put in resistance heating because it's zone heat. You can heat the rooms you're in, leave the other rooms off."

Reisenauer says resistance heating has been proven to be 100-percent efficient. For every dollar you put in, you're getting a dollar's

worth of heat out. Ground-source heat pumps are 200- to 300-percent efficient. A natural gas furnace is about 90-percent efficient, with some of the newest, most efficient models being about 97-percent efficient.

"Electric resistance heat, compared to a natural gas furnace, is very efficient. But the ICC wants to compare electric to electric," Baumgartner says. "Within the Basin Electric family, we have members that offer rebates for both heat pump technology as well as resistance heating. Cooperatives generally support applications that work best for the members needs."

“They were going to greatly restrict the homeowner’s ability to install electric resistance heating in their home.”

*Chris Baumgartner, Basin Electric*

## Cost of installation

*\*Calculations using a 3,000-square-foot home*

- Ground-source heat pump \$15,000-\$20,000
- Air-source heat pump \$7,000-\$8,000
- Baseboard heat \$2,500

“The DOE is not hiding its efforts to support natural gas over coal.”

*John Holt, NRECA*

Reisenauer says while the installation cost is much cheaper for baseboard heat (see sidebar), the operating costs for baseboard heat are two or three times higher than for a ground-source heat pump. Even with those savings, he says the payback on a ground-source heat pump is about 10 years.

Reisenauer attended the ICC conference to testify against the limitations to electric resistance heating. “Historically, more than 50 percent of Basin Electric’s residential members use some kind of electric resistance heating.”

Ultimately, the code language to limit resistance heating was defeated.

## Appliances

When you’re shopping for appliances today, you’ll see a yellow EnergyGuide label showing how efficient that appliance runs. The DOE is now considering a proposed policy to include new calculations in appliance energy efficiency standards, according to Dale Niezwaag, senior legislative representative for Basin Electric. For some of the numbers, the standards would move from site-based to source-based standards.

Here’s what that means. Instead of the label just showing how much electricity the refrigerator will use over the course of the year, it would also show a number calculated on where your home is located, what types of fuel are used to generate your electricity, the time of day, the season, and other factors.

In 2007, the Federal Trade Commission rejected these types of metrics, which are known as “full fuel cycle.” A 2009 National Academy of Sciences study stated that the DOE should move toward using full fuel cycle on its EnergyGuide labels. That study was mandated by the 2005 Energy Policy Act, according to Niezwaag. The proposed policy came up again in August 2010, and the DOE accepted comments on the change through Oct. 19. Depending on the comments received, the DOE will decide whether to propose a new rule.

In September, John Holt at the National Rural Electric Cooperative Association sent a letter to the Department of Energy, explaining why full fuel cycle labels would be bad. “By being market and fuel neutral, these (current) standards have maximized energy savings while minimizing the effect on the supporting markets. . . . Site energy can be easily measured and verified. Full fuel cycle cannot.”

Holt goes on to explain that a consumer could buy a very inefficient refrigerator, but because they live in the Pacific Northwest where a lot of hydropower is used to generate electricity, the EnergyGuide label would show that the appliance is quite efficient. Conversely, a consumer in the Midwest could buy a very efficient refrigerator, but because most of their electricity is generated by coal, it would look to be inefficient on the label.

Holt says these labels would mislead consumers about the actual energy use of their appliances. “It also places a burden on the appliance manufacturers that could result in increased product cost,” Holt writes.

“The DOE is not hiding its efforts to support natural gas over coal,” Holt says.

## Home Energy Scoring Program

In November, Vice President Joe Biden and Energy Secretary Steve Chu launched the DOE’s Home Energy Scoring Program. It’s designed to offer homeowners information about their homes’ energy efficiency.

The voluntary program provides a report that scores a home on a scale from 1 to 10, 1 being inefficient and 10 being efficient. The report also includes customized recommendations for improving a home’s score.

John Holt, senior manager of Generation and Fuel at the National Rural Electric Cooperative Association, says the program is using source-based numbers. That means, for example, if your home gets a “4,” one recommendation could be to replace your electric water heater with a natural gas water heater to raise your score. Holt says your electric water heater can be 95 percent efficient, but if they trace the electricity back to being generated by coal, it would be considered less than 30 percent efficient. The natural gas water heater is 65 percent efficient, and would be considered more than 50 percent efficient using source calculations.

“We like the concept of an easy-to-use model to check on home energy efficiency that offers constructive advice on how to improve the efficiency, but we don’t think they should be using source-based numbers,” Holt says.