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Summer Comfort

NEXT-GENERATION HIGH-EFFICIENCY AIR CONDITIONERS

The switch by air-conditioner manufacturers to a more environmentally friendly refrigerant is complete. Manufacturers of central air conditioners have held prices steady, but installation costs are up because of the switch. And the federal government isn't helping as much with the purchase as it did 2 years ago.

By John R. Hall

A funny thing happened on the way to promoting the purchase of energy-efficient air conditioners: The federal tax credits that were intended to heat up consumers' interest

in high-efficiency central air conditioners 2 years ago dried up.

The good news is that prices are about what they were in 2009, although the new standard for refrigerants, R-410A, has led to an increase in installation costs. Meanwhile, developments

in the past 2 years have focused on tweaks to help central air conditioners to run more efficiently and on technology that helps to diagnose problems.

CREDIT THIS. The federal tax credit that was part of the American Recovery

and Reinvestment Act of 2009 isn't gone, but it's only a shadow of its former self.

That incentive gave to consumers a tax credit of 30 percent of the installed price, up to a maximum of \$1,500, for a new central air conditioner that had a seasonal energy-efficiency rating (SEER) of at least 16. The program was extended through 2011, although the maximum tax credit has been reduced to a flat \$300. (*Editor's note:* You also can get the \$300 tax credit through the end of the year if you install a *package system* [cooling and heating], in which all of the cooling components are in one cabinet, the cooling function has a 14 SEER and the heating function has an energy-efficiency ratio [EER] of 12.)

Previously, you could recoup most of the typical difference in price between a 13-SEER air conditioner (the minimum efficiency standard) and a more efficient 16-SEER model. It was a good deal. Is it still worth your hard-earned dollars to buy a higher efficiency unit? Contractors, unsurprisingly, say yes, but beyond the obvious—the fact that they stand to make more money installing the pricier 16-SEER unit—the reasons are compelling.

Steve Fink, who is a Long Island, N.Y., contractor broke it down for us: The annual per-ton cost of a 13-SEER central air conditioner would be about \$270 per year, so a 2-ton model would cost \$540 per year to operate. A 16-SEER system would cost \$219 per ton or \$438 per year to operate a 2-ton unit—a savings of \$102 per year. (Figures will vary depending on geographic area, utility costs and use patterns.) Adding in the tax credit would mean that you could pay off the difference in the purchase price of the central air conditioner—roughly \$1,000—in 7 to 8 years, which is well within the typical lifetime of a central air conditioner. Of course, as electric rates rise, savings would increase as well.

COOL INNOVATIONS. The big development in the efficiency of central air conditioners that seemed imminent 2 years ago hasn't happened. **Nordyne**



remains the only manufacturer that uses *inverter technology*, which allows a system's motor, compressor and fan to run at variable speeds. That means that the air conditioner uses only the electricity that's required to achieve cooling demands and results in super-efficient cooling (24.5 SEER, compared with a non-inverter industry high of 21 SEER). Although other major manufacturers told Consumers Digest 2 years ago that they were testing inverter models, none has produced such a model, and they wouldn't even tell us whether they still were pursuing inverter technology.

Instead, manufacturers have made only tweaks to their products. For example, Trane dialed up its thermostat technology a notch. The company applied Internet connectivity to its central air conditioners. Trane's ComfortLink II thermostat—when it's coupled with a telephone-access module, which is a control box that's on the air conditioner and uses its own Internet address—allows you to adjust temperature settings by using your computer or smartphone. You'll pay about \$750 to cover the installed cost of the thermostat, router and access module, plus a yearly \$99 fee to Trane. This technology works only on Trane's premium XL20i and XL16i air conditioners, and you also must have a Trane thermostat that has that communicating technology.

Other manufacturers are mum about embracing Internet connectivity, but given that such connectivity is being pursued by at least three appliance

manufacturers, we wouldn't be surprised if more air-conditioner-makers quickly jump in. For now, the price seems a bit steep for the convenience.

Not as high-tech but still noteworthy: More major manufacturers are using all-aluminum evaporator coils, which are designed to combat corrosion. Coils typically have been made of copper, but in high-humidity regions of the country, such as those that are near to large bodies of water, copper coils can corrode within a few years or, in extreme cases, even a matter of months. A new coil will cost you at least \$300—the price varies by model size and manufacturer—and that's not counting the labor costs to install it.

Goodman, Nordyne and Trane have, or are planning to have, all-aluminum coils in their central air conditioners. Goodman tells us that its all-aluminum indoor evaporator coils will be used in all of its air conditioners by year-end, and—better yet—that that will happen without increasing the cost to distributors (and thus, presumably, to consumers). Nordyne introduced all-aluminum outdoor evaporator coils in its 13-SEER air conditioners in 2010 and will expand that to its 14-SEER and 16-SEER units this year. All-aluminum indoor coils are forthcoming, although Nordyne declined to say when those would arrive. Prices to Nordyne distributors will not increase, the company says.

R YOU LISTENING? The deadline for all new air conditioners (central and room units) to use the environmentally friendly R-410A refrigerant has passed, and manufacturers with whom we spoke say R-410A will be the refrigerant of choice for the foreseeable future. Although central-air-conditioner manufacturers have eased in the use of R-410A refrigerant over the past few years to keep the prices of their products steady, that isn't the case when it comes to the installation costs.

Heating and cooling contractors say you should expect to pay as much as 15 percent more to have an R-410A central air conditioner installed than you paid to install an old R-22 model.

Contractors say those additional costs typically are for replacing refrigerant lines to handle the higher pressure R-410A and evacuating R-22 out of the old systems.

Room air conditioners almost universally made the switchover to R-410A refrigerant last year, and one manufacturer has taken the programmability of its room air conditioners to the next level. The previous standard was 24-hour programmability, but Friedrich incorporated a 7-day programmable thermostat in its new Kühl line of air conditioners, which were introduced in late spring of 2010. Not only can you program different temperatures for each day of the week, but you can input

Save Your Energy

Even though tax credits are smaller, you still might be able to score some big savings on the purchase of central and room air conditioners through a variety of local and regional rebate programs. These typically encourage the replacement of older air conditioners with more-efficient models. Rebates vary from \$40 to \$1,000. You can check with your local utility for information on rebates or visit energystar.gov and search by ZIP code for rebates.

Manufacturers also offer rebates on high-efficiency central air conditioners—we've seen some as high as \$1,200—but those depend on region and season.

up to four settings per day. Friedrich says the feature delivers the programmability and convenience of a central air conditioner, but it will cost you almost as much as a central air conditioner would. Friedrich's Kühl line starts at \$1,000.

Friedrich hasn't decided whether to bring that feature to its other less expensive room air conditioners. (It will be only on Kühl models at least through 2012, the company tells us.) But it certainly would be cool if it did. ●

John R. Hall is a freelance writer and former business editor of The Air Conditioning, Heating & Refrigeration News who has reported on the HVAC trade for 14 years.

✓ Best Buys in Central Air Conditioners

Best Buy Categories

[P]=Premium selection
[M]=Midrange selection
[E]=Economy selection



Best Buys in central air conditioners were selected based on energy efficiency, noise level, features and brand reliability.

Best Buys are for a series of units.

All central-air-conditioner Best Buys qualify for a federal energy tax credit of \$300.

All central-air-conditioner Best Buys have built-in monitoring that can detect and display problems in the system.

Peak efficiency SEER (seasonal energy-efficiency ratio) is the ratio of output in Btu and watts used.

Manufacturers don't publish MSRPs for central units. Our MSRPs are based on input from contractors, distributors and installers' price books. MSRPs reflect prices on a 2-ton (24,000 Btu) model and don't include installation.

CENTRAL AIR CONDITIONERS

[P] **Broan/Frigidaire/
NuTone/Tappan/
Westinghouse FS4BI**

MSRP: \$4,070

>>The FS4BI outshines its competitors in terms of efficiency because of Nordyne's unique variable-speed compressor, which allows components to draw only the energy that the unit needs to operate. It also has the lowest sound reading—59 decibels—of any central air conditioner that we found. The **Maytag PSA4BI** (\$4,400), which has a 12-year warranty and a stainless steel exterior, is also a Best Buy.

Features:

- * Output: 2 to 4 tons
- * Peak efficiency SEER: 24.5
- * Warranty: 10 yrs.

[M] **Carrier Infinity 24ANA1**

MSRP: \$3,160

>>You can't buy a more efficient central air conditioner than the Infinity 24ANA1 without paying \$900 more than this unit costs. We like this model's patented silencing

system, which reduces decibels to as low as 68—most other models that are in this price range exceed 70 decibels.

Features:

- * Output: 2 to 5 tons
- * Peak efficiency SEER: 21.0
- * Warranty: 10 yrs.

[E] **Goodman/Amana
Distinctions SSX16**

MSRP: \$2,045

>>The SSX16 has Goodman's reputation for reliability, and it's one of the lowest priced units that we found that meets the federal tax-credit standard. This model has the best warranty of any model that we found. However, to get the maximum warranty, you have to purchase a new indoor coil, which costs up to \$800.

Features:

- * Output: 2 to 5 tons
- * Peak efficiency SEER: 16.0
- * Warranty: 10 yrs.; lifetime compressor

For more information about the above Best Buys, contact the manufacturers directly.



Westinghouse FS4BI

Innovation has its rewards. iQ Drive®

Find out more about the award-winning iQ Drive® air conditioner and iQ Drive heat pump. Contact your Westinghouse dealer or visit www.westinghousehvac.com.



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MSRP stated in article does not include installation or system components.
Costs will vary based on the needs of an individual home and complete system costs.

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