

[MARKET UPDATE]

By Michael Chamernik and
David Malone, Associate Editors

STANDARDS

New Residential AC Efficiency Levels

Many of us grew up with at least one parent who was vigilant about air conditioning use. Even on a 90-degree day with 95 percent humidity, asking to turn on the AC would be met with: “No! Air conditioning costs money.”

Soon air conditioning may cost significantly less, thanks to an agreement by industry and efficiency advocates to increase central cooling system efficiency. A new standard, developed by the U.S. Department of Energy, could save consumers \$38 billion over the life of the rule.

Around 60 percent of U.S. households have a central cooling system, and most new homes are built with central air conditioning, so a change in standards would have widespread effects.

“The energy and bill savings from the recommended new central AC and heat pump standards will really add up for consumers and the nation,” Andrew deLaski, executive director of the Appliance Standards Awareness Project and the ASRAC (Appliance Standards and Rulemaking Federal Advisory Committee) representative on the working group, said in a release. “Savings will reach about 300 billion kilowatt-hours on sales over 30 years (enough to cool 150 million average homes for a year) and \$38 billion in bill savings.”

The most recent proposal will work with previous consensus standards issued in 2011 and 2006. Combined, these three standards would raise central air conditioning and heat-pump



efficiency by about 50 percent in a period of less than 20 years.

Once the DOE approves the latest round of standards, the new energy-efficiency levels will go into effect on Jan. 1, 2023. These standards will achieve a 7 percent savings, which will amount to the power used by 27 million households per year.

In addition to saving money, the new standards will help reduce air pollution. “Standards set according to this agreement are expected to save 13 million metric tons of carbon dioxide by 2030, adding up to the 2.2 billion metric tons already on the books toward meeting President Obama’s 3 billion ton goal from standards set during this administration,” writes Meg Waltner, manager for the Building Energy Policy, Energy & Transportation Program, in her Natural Resources Defense Council blog. —DM

ENERGY

Study: Electric Water Heaters Underutilized

A new study finds that electric water heaters are a significant source of untapped potential energy: Advanced water heaters could save consumers up



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to \$200 annually and could cut greenhouse gas emissions by up to 50 percent.

The research was commissioned by the Natural Resources Defense Council (NRDC), National Rural Electric Cooperative Association, Peak Load Management Alliance, and Great River Energy, along with analysis from economic consulting firm The Brattle Group.

The full study, "The Hidden Battery: Opportunities in Electric Water Heating," by Brattle principals Ryan Hledik and Judy Chang, and associate Roger Lueken, is available on Brattle's website, brattle.com.

Only a small percentage of the nation's 50 million water heaters is currently used for energy storage. Grid-interactive water heaters—units that connect with local utility or grid operators and communicate in real time—

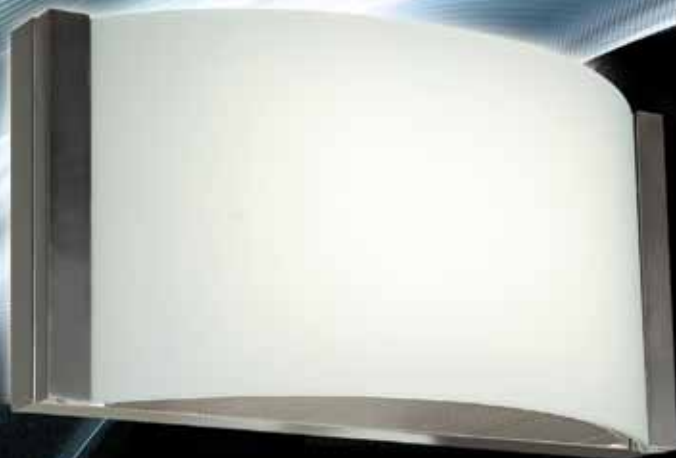


can heat water at off-peak times, draw heat from surrounding air, and store hot

water for later use. The analysis says that a 50-gallon tank can withstand several hours of interruption without running out of hot water.

The advanced water heaters are also environmentally friendly. Robin Roy, NRDC's director of building energy efficiency and clean energy strategy, wrote in a blog post on NRDC's Switchboard that grid-connected electric resistance water heaters could potentially cut carbon pollution by up to 30 percent "because they give utilities greater flexibility to use lower polluting fuels or clean energy such as solar and wind power."

The groups behind the study are set to launch the Community Storage Initiative (CSI), which "by aggregating distributed energy technologies and home appliances, electric cooperatives



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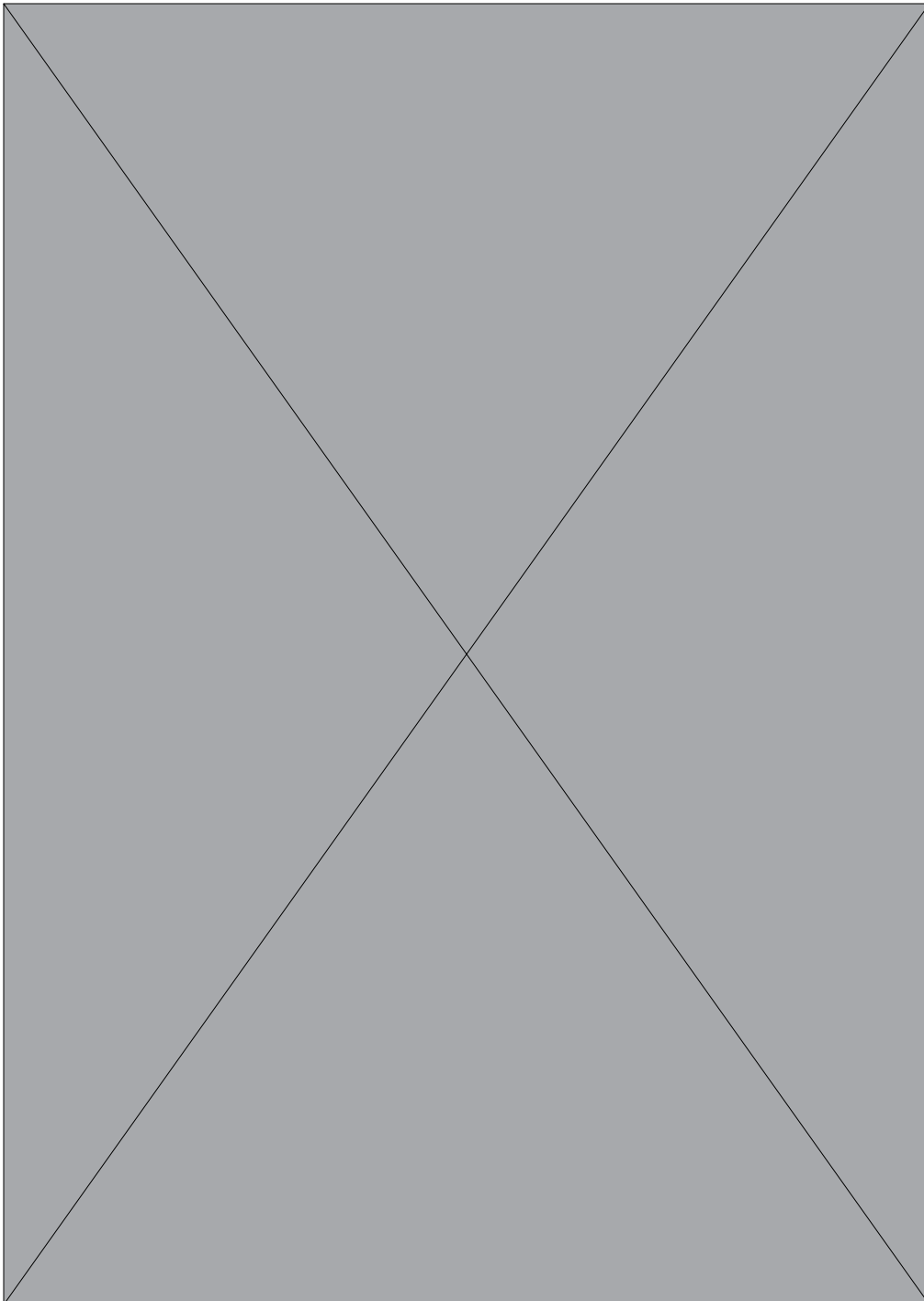
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are developing community storage to increase energy efficiency, better integrate renewable energy resources onto the grid, and reduce customers'

monthly electric bills," according to a press release by the CSI.

One community storage program has already seen some success. Great

River Energy, a Minnesota-based cooperative, can store up to a gigawatt of energy each night by controlling 65,000 electric resistance water heaters. The water heaters use energy when natural resources allow (windy and sunny days, for instance), heat water to high temperatures, and then shut down during peak times. —MC



Circle 760

HOUSING MARKET

Urban Home Values Surpass the Suburbs

City living is in vogue and market changes are reflecting that trend, with urban home values accelerating faster than suburban home values.

A Zillow study examining home values of ZIP codes across the U.S. defines areas as urban, suburban, or rural based on how survey respondents describe their neighborhoods.

The survey found that the 2015 Urban Zillow Home Value Index (ZHVI) was \$269,036, compared with the 2015



Boston brownstones

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Suburban ZHVI of \$263,987. The one-year and five-year changes were also larger: Urban home values rose 7.5 percent from 2014 to 2015 and 28.4 percent

from 2010 to 2015, compared with 5.9 percent and 21.1 percent, respectively, for suburban homes.

Several cities have seen urban values

surpass suburban values, including Boston (\$440,869 2015 Urban ZHVI), Washington, D.C. (\$425,611), and San Francisco (\$927,890). Hot cities such as Denver (14.4 percent), Portland (12.5), and Seattle (11.4) have experienced large Urban ZHVI increases over the last year, and urban values in San Jose (73.7 percent), Phoenix (64.6), and Las Vegas (62.7) have risen substantially over the last five years.

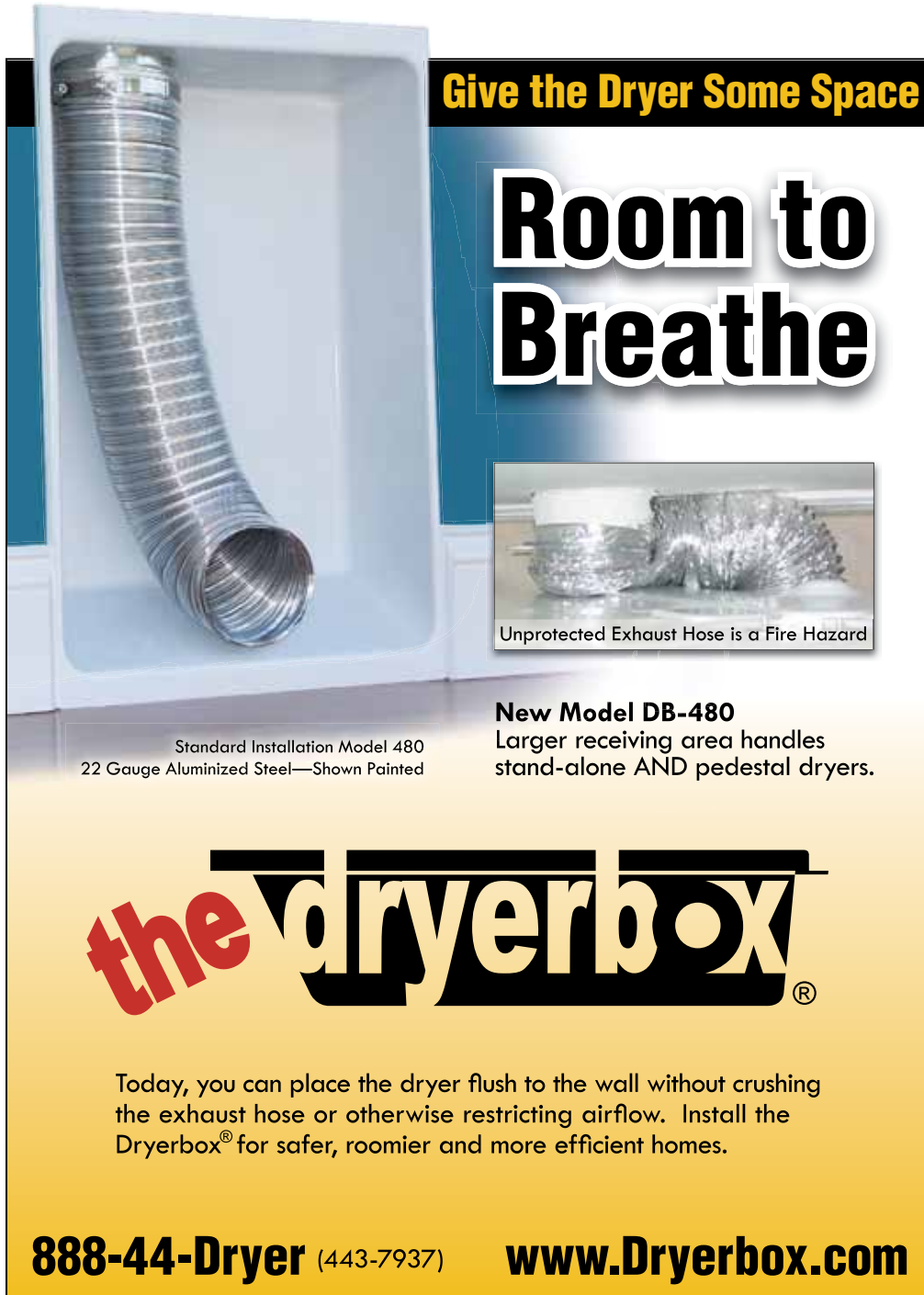
These increases are due in part to factors such as redeveloped downtowns and the availability of high-end urban condos. Also, Millennials are delaying starting families (and moving to suburbia) and are choosing to live in the city. "This trend, in part, reflects homebuyers' changing preferences, as they seek amenity-rich, dense, and walkable areas that are often closer to their workplace," Zillow chief economist Dr. Svenja Gudell said in a statement. "In the future, this lifestyle trend will change some suburbs as we know them, and they'll start to feel more urban as buyers move further from city centers in search of affordable housing in communities that still feel urban." —MC

TECHNOLOGY

Dedicated Indoor Mobile Systems?


In addition to groups of smokers huddled outside of buildings braving the winter chill, there's almost always a group of smartphone users right next to them doing the same thing to get a few moments of uninterrupted service.

Globally, it's estimated that there are 2 billion smartphone users, and 80 percent of the mobile traffic generated by those users either originates or terminates in a building. That's a huge number, so it may be surprising to learn



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that just 2 percent of commercial buildings have dedicated indoor mobile systems. Not only would such a system help reduce the number of building occupants doing the I-don't-have-service dance, but a study commissioned by telecom company CommScope and carried out by Coleman Parkes Research discovered that this dedicated technology can increase a property's value by 28 percent. That means a \$2.5 million office building could be worth an additional \$700,000.

Respondents to the study also cited benefits to the enterprise tenants, including an increase in workforce productivity, supporting the recruitment of more talented individuals, and



attracting more visitors to the property.

With benefits for everyone, implementing these dedicated systems seems like a no-brainer. Why is the use of this technology currently so limited?

For starters, no one is quite sure who

should be responsible for installing the technology. Some 26 percent of survey respondents pointed the finger at IT managers, 35 percent at network operators, and 22 percent looked to building managers.

Additionally, the cost of the network, the complexity of the technology, and the lack of skilled workers to manage it were, respectively, cited by 35 percent, 19 percent, and 11 percent of respondents as roadblocks to implementation.

But, with smartphone use now an integral part of the workday, there may be greater effort to overcome those obstacles, as quality service increasingly becomes a necessity rather than an optional perk. —DM

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