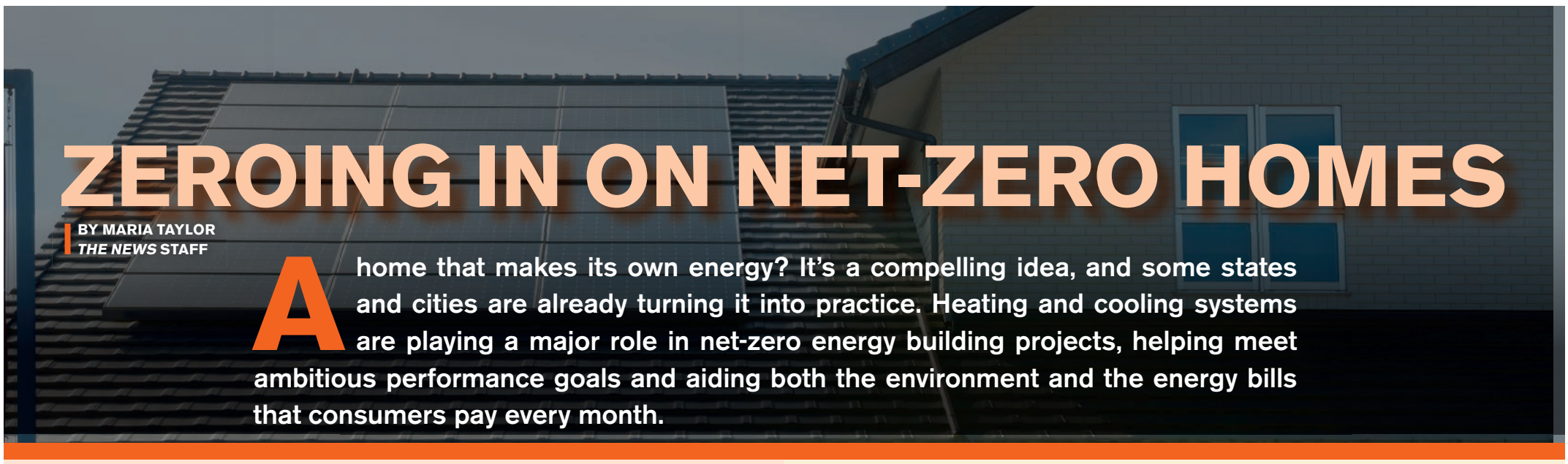

ZEROING IN ON NET-ZERO HOMES

BY MARIA TAYLOR
THE NEWS STAFF

A home that makes its own energy? It's a compelling idea, and some states and cities are already turning it into practice. Heating and cooling systems are playing a major role in net-zero energy building projects, helping meet ambitious performance goals and aiding both the environment and the energy bills that consumers pay every month.

$0

Annual bill for a net-zero energy home.

A net-zero energy house produces as much energy as it consumes over the course of a year. Residences consume 21 percent of energy in the U.S. and produce 16 percent of the country's greenhouse gas emissions.

70%

Increase in net-zero energy housing units in the U.S. in 2017.

In contrast, 2016 showed a 33 percent increase over the previous year.

74%

Increased efficiency of a 2,700-square-foot, two-story, net-zero test home, occupied by a simulated family of four in the Maryland suburbs, over a standard home in the same climate.

Instead of paying the area's typical $4,400/year electric bill, the home actually exported energy to the electric grid. Energy management techniques tested on-site by the National Institute of Standards and Technology (NIST) included new construction methods; integrated architectural design; renewable energy sources including solar panels; and high-efficiency systems for heating, cooling, and humidity control.

2020

Year by which California will require all new residential construction to be net-zero energy.

The California Energy Efficiency Strategic Plan, adopted by the California Public Utilities Commission in 2008, also requires all new commercial construction to be net-zero energy by 2030. The new requirement is anticipated to add approximately 100,000 homes every year that are close to net-zero energy.

5,000

Number of net-zero energy single-family homes in the U.S.

There are also over 7,000 net-zero energy multifamily units. California is the leader by volume, followed by Arizona. Other strong regions in North America include the Pacific Northwest and western Canada, the rest of the U.S. Sun Belt, the Northeast through the Great Lakes region, Hawaii, and Florida. The Heartland, Alaska, and far-northern Canada have the least amount of activity in residential net-zero energy construction.

$19,000

Savings over 30 years, per an estimate by California commissioners, once the California mandate goes into effect.

Added upfront cost is estimated at $9,500, but the 30-year average works out to a savings of $80/month.

SOURCES: National Institute of Standards and Technology (NIST), **www.nist.gov;** Net-Zero Energy Coalition, "Zero Energy Residential Buildings Study," published April 2018, online at **https://drive.google.com/file/d/121AztewufuOhTvSCryN4XuydacLqSMTN/view.**