

# What's Next for Standard 90.1

**ATLANTA**—In late July, the U.S. Department of Energy (DOE) issued a determination that ANSI/ASHRAE/IES Standard 90.1-2019, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, improves energy efficiency in commercial buildings compared to the 2016 standard.

The final determination makes the 2019 version of the standard the reference energy-efficiency standard for buildings other than low-rise residential buildings, said Standing Standard Project Committee 90.1 Chair Don Brundage, P.E., Member ASHRAE; Co-Vice Chair Thomas Culp, Ph.D., Member ASHRAE; and Co-Vice Chair Richard Lord, Fellow ASHRAE.

“Until DOE issues a positive determination for an edition of Standard 90.1, that version of Standard 90.1 is just another building energy-efficiency code and has no special status compared to other energy-efficiency codes,” the SSPC members said. “A positive determination by DOE grants that version of Standard 90.1

special status as the model energy code for buildings within the 90.1 scope.”

## Now What?

DOE analysis shows the updated standard could cause national savings in commercial buildings of about 4.7% site energy, 4.3% source energy and 4.3% energy cost. States and other jurisdictions are now required to review their commercial building code regarding energy efficiency and update their codes to meet or exceed Standard 90.1-2019. Each state or jurisdiction has their own process for considering updates to their energy-efficiency codes, said the SSPC members.

“Federal energy legislation requires each state, within two years after the DOE determination is issued, to certify that their energy codes use the same or less energy than the reference standard,” they said.

Brundage, Culp and Lord recommended ASHRAE members become familiar with the 2019 edition of the

## How much energy could Standard 90.1-2019 save?\*



\*Compared to Standard 90.1-2016

Source: U.S. DOE

standard as “it is likely that their local jurisdiction will adopt 90.1-2019, or another standard of similar stringency in the next few years.”

The standard could affect the design and construction of buildings that fall under its scope—all buildings other than residential structures with three floors or fewer above grade, they said.

“The latest edition of 90.1 contains energy reduction measures, which have passed rigorous cost-benefit analysis. This [standard] can be used to design a new or renovated building more efficiently while having confidence that the efficiency measures are cost-effective in that climate zone, assuming national average utility rates,” they said. ■

## Industry Roundup

### Estimating Commercial Buildings' Energy Use

**PITTSBURGH**—University of Pittsburgh researchers used the City of Pittsburgh to create a model built upon the design, materials and purpose of commercial buildings to estimate their energy use and emissions. With street-level images to determine the building material, window-to-wall ratio and LiDAR data from the U.S. Geological Survey to determine building height, the researchers could simulate and map the annual energy use intensity of 209 structures. *Source: University of Pittsburgh*

### Making Air-Conditioning Systems More Efficient

**RICHLAND, WASH.**—Technologies the Pacific Northwest National Laboratory (PNNL) is developing to improve air-conditioning systems includes a novel, energy-efficient dehumidification system that requires up to 30% less energy and is one-third the size and weight of conventional dehumidifiers. PNNL materials scientists are also developing and testing a technology that detects fluorocarbon refrigerant leaks from HVAC systems using a specially designed coating that selectively collects refrigerant vapor molecules. *Source: PNNL* ■