Pandemic Accelerates IAQ Technology Development

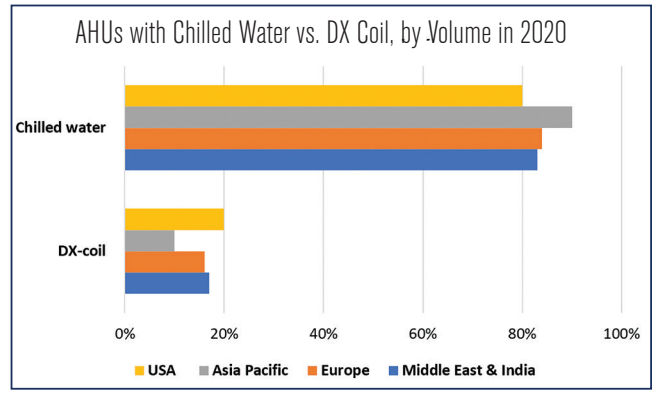
Contributed by BSRIA Worldwide Market Intelligence

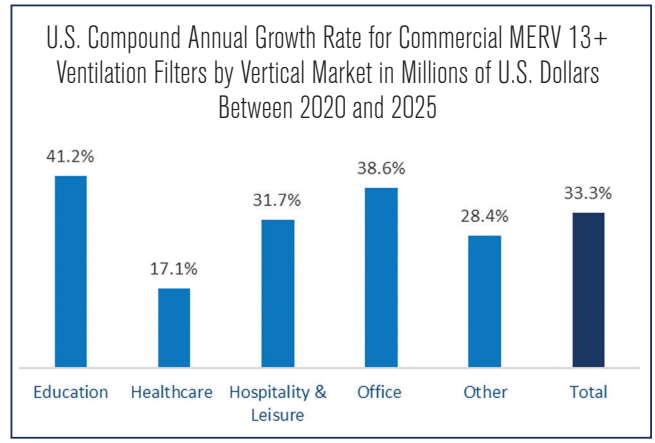
BRACKNELL, BERKSHIRE, U.K.–The COVID-19 pandemic has increased awareness of the importance of ventilation and maintaining good indoor air quality, especially in commercial spaces. HVAC manufacturers and controls companies have actively been looking to adopt products, solutions and services to tackle the spread of the coronavirus and help people have confidence returning to commercial and public buildings.

The latest BSRIA World Air Conditioning and Building Automation Controls (BACS) studies published in March 2021 revealed a significant number of new product launches, especially with the split air-conditioning market and direct expansion (DX) coil air-handling units (AHUs). The common theme among the products was integration of ventilation with DX systems, air purification, smart sensors, controls, the adoption of enabling Internet of Things and artificial intelligence prediction control.

The pandemic has created the opportunity for manufacturers to launch or accelerate the development of these technologies. While it takes years to develop a new product or solution, some of these technologies were already in process. BSRIA has been recording the sales of these for many years, and the technologies' adoption has been steadily growing. During the pandemic, there has been a surge of these units to meet demand for immediate ventilation needs, especially in the health-care sector. The top chart above, as an example, shows the ratio of AHUs with a DX coil vs. a chilled water system. Changes are expected in the ratio going forward.

HVAC and controls manufacturers will market the combination of existing technologies with the new adaptations and new technologies, with emphasis on ventilation and IAQ. Building owners and operators need to review the best solutions for their buildings. It is too early to say which technologies or solutions are here to stay and which are fads that would be adopted by different verticals.





BSRIA is undertaking a study looking at IAQ in commercial buildings in North America. The market analysis will provide a full understanding of the solutions available in the market and where the demand and supply are heading. The study will be based on interviews with a panel of respondents from selected verticals and forecast the next five years.

The study will focus on how filtration, air purification, ventilation with dedicated outdoor air systems, controls and air conditioning connect with IAQ. BSRIA expects to see significant growth rates in the demand for filtration filters in key commercial applications such as education, hospitality and offices over the next few years (bottom chart). The study will be available in June.

To learn more about BSRIA, visit www.bsria.com ■

Industry Trend

What You Need to Know About Smart Grids


Steven Bushby, Fellow ASHRAE

There is a lot to know about smart grids, and the technology is rapidly changing. To help people better understand smart grids, Steven Bushby, Fellow ASHRAE, discusses what engineers need to know about this industry trend. Bushby is leader of the Mechanical Systems and Controls Group of the Building Energy and Environment Division of the Engineering Laboratory at the National Institute of Standards and Technology.

Why is it important to talk about smart grids now?

Building owners make investments that are intended to serve the occupants for time scales of decades. Even though the transformation to a smart grid is still in progress and will take additional time to be completed, building owners can do many things now to begin to reap the benefits and prepare for additional benefits in the future. It is prudent to consider smart grid implications in design and upgrade decisions that are being made now because the building owner will live with the consequences of those decisions for many years.

What do ASHRAE members need to know about smart grids?

- The United States established a policy to develop and deploy a smart electric grid with the 2007 passage of the Energy Independence and Security Act, which became effective in December 2010. Substantial investments in transforming the grid have already been made, and they will be continuing for many years.
- One of the drivers for a smart grid is to be able to greatly increase the percentage of electricity generated from renewable energy, much of which is intermittent in nature (wind and photovoltaics). Achieving high levels of intermittent renewable generation requires coordination and collaboration with the loads in buildings. Energy storage can help, but today it is not economically feasible to have storage on a large enough scale to solve the problems without additional assistance.
- With the trend toward low-energy and net zero energy buildings, the buildings become generators of electricity as well as consumers. Low-energy and net zero energy homes and buildings still need the grid. The historic grid was not designed to manage two-way flow or the changes in load patterns that result from these types of buildings. Collaboration between buildings and the grid is needed to manage these issues.
- Applying smart grid concepts to building operation can be part of a strategy to maintain resilience during storms and other kinds of events that impact reliability.

Read the full Q&A: https://tinyurl.com/22wafba8 ■

Industry Roundup

Phasedown of HFCs Moves Forward

WASHINGTON, D.C.–In early May, the U.S. Environmental Protection Agency proposed a phasedown of the production and consumption of hydrofluorocarbons (HFCs), which are commonly used in refrigerators, air conditioners and other applications. This phasedown could decrease the production and import of HFCs in the U.S. by 85% over the next 15 years. This is the first proposed rule under the American Innovation and Manufacturing (AIM) Act of 2020. For more information, see Page 26.*Source: EPA*

DOE Issues Preliminary Determination For Standard 90.1-2019

WASHINGTON, D.C.–The U.S. Department of Energy announced in late April its preliminary determination of energy savings for Standard 90.1-2019. The DOE estimates national savings in commercial buildings of about 4.3% in source energy savings; 4.7% in site energy savings; 4.3% in energy cost savings and 4.2% in carbon emissions. The DOE conducted a technical analysis that assesses Standard 90.1-2019 compared to the previous edition and estimates the anticipated energy consumption of buildings required to meet the updated standard. *Source: U.S. DOE* ■