



## Building the **connected kitchen** of the future



In October, Emerson broke ground on a new 40,000 sq. ft. facility focused entirely on the research and development of new technologies in the HVACR industries. Located on the University of Dayton campus, the Emerson Innovation Center, or “The Helix” as we refer to it, is designed to serve as a hub where academic researchers and industry professionals can jointly develop and test concepts in real-world environments.

One of the testing labs currently under construction is a fully operational, 1,500 sq. ft. commercial kitchen and working restaurant capable of serving 150 patrons. Unlike other research centers of its kind that are focused primarily on hot- or cold-side concerns, we’re taking a holistic approach to addressing the many challenges facing today’s busy commercial kitchens.

In addition to simulating hot and cold climates, we’re evaluating everything

from zoning, lighting and store comfort to humidity, food temperature and recycling scenarios. And, we’re keeping the interests of the foodservice industry’s three primary stakeholders in mind:

- Customers, with increasingly discriminating tastes and preferences, seek improved food quality and pleasant dining experiences
- Employees look for new ways to meet customer demands, enable kitchen efficiencies and reduce downtime
- Owners strive to minimize maintenance costs, maximize profits and differentiate themselves in a competitive marketplace

The concept of connectivity in equipment and systems will be integral to our research in the commercial kitchen. Utilizing the latest technology from foodservice equipment manufacturers and Emerson’s own electronic controls and food recycling systems, the connected kitchen and restaurant module is designed so that every piece of cooking equipment and building system will be able to communicate multiple data points. The intent is to give owners and operators



*“The Helix” Innovation Center will house a fully operational commercial kitchen.*

visibility to know exactly what's happening in the restaurant at any given time — and from any location.

While the facility is still under construction, the research process has

already begun. We've assembled a commercial kitchen research team that has been visiting local kitchens to evaluate real-world scenarios, brainstorm potential solutions and prepare to test these theories

in the lab. We're excited to have the opportunity to develop the connected kitchen of the future, as well as share new solutions and insights with the foodservice industry.

## Refrigerant Update



### One SNAP proposal final, another is pending

Last year, the EPA introduced two significant new alternatives policy (SNAP) proposals aimed at the use of refrigerants with high global warming potential (GWP) in refrigeration and air conditioning equipment. The first of these SNAP rulings, which sought to introduce a number of refrigerant alternatives, has recently been finalized.

The five approved substitutes have a GWP ranging from 3 to 675 and are intended to replace ozone-depleting substances and high-GWP hydrofluorocarbons (HFCs) with GWPs from 1,400 to 4,000. These refrigerants were approved for use in specific applications:

- Ethane — very low-temperature refrigeration; non-mechanical heat transfer
- Isobutane — retail food refrigeration (stand-alone commercial refrigerators and freezers); vending machines
- Propane — household refrigerators, freezers, or combination refrigerators and freezers; vending machines; room air conditioning units
- R-441A (hydrocarbon blend) — retail food

refrigeration (stand-alone commercial refrigerators and freezers); vending machines; room air conditioning units

- HFC-32 (difluoromethane) — room air conditioning units (one-third the GWP of its predecessor)

It's important to note that these refrigerants are already being used in Europe and Asia. And, other than HFC-32, all are considered exempt from the EPA's venting prohibition, who has stated that these refrigerants "pose no apparent threat to the environment."

The other SNAP initiative, in which the EPA has proposed to delist R404A and many other commonly used refrigerants, is still pending. From all indications, the final ruling will be announced later this year, near mid-summer. I have discussed the implications of this proposal at length in recent *E360 Outlook* editions, so please refer to those columns for more information.

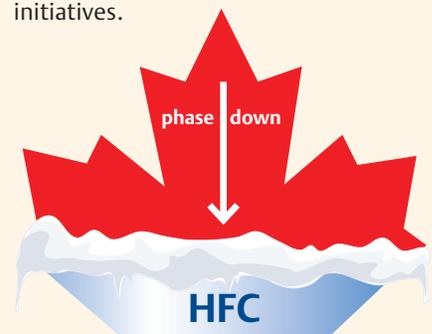
### Canada introduces HFC phase-down

Finally, the government of Canada recently took a stronger stance on HFCs with the announcement of its own regulatory measure via a "Notice of

Intent to Regulate Hydrofluorocarbons."

Their proposal is based on a two-fold approach: 1) to prohibit specific HFCs by year and sector; and 2) to impose a gradual phase-down of HFCs from a calculated baseline. The latter is modeled after the North American Proposal (an amendment to the Montreal Protocol), put forth by Canada, Mexico and the United States.

It's more evidence that while the neighboring countries continue to take different regulatory paths, they are influencing each other and ultimately working toward the same objective. Like the U.S., Canada has invited industry stakeholders to participate in the development of regulatory measures in hopes of achieving mutual agreement on these environmental initiatives.



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