



# 2023 TREND REPORT

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2023 **AHR** EXPO  
THE EVENT FOR HVACR / ATLANTA / FEB 6-8



# 2023 Trend Report

HVACR remains one of the most unique industries as it is comprised of professionals from many different sectors and career disciplines. Collectively we all address the goals, however, day-to-day work practices often look very different. It is with this in mind that we created the Industry Trend Report – to provide a thoughtful connection point for our audiences with the goal of identifying the state of the industry ahead of the show.

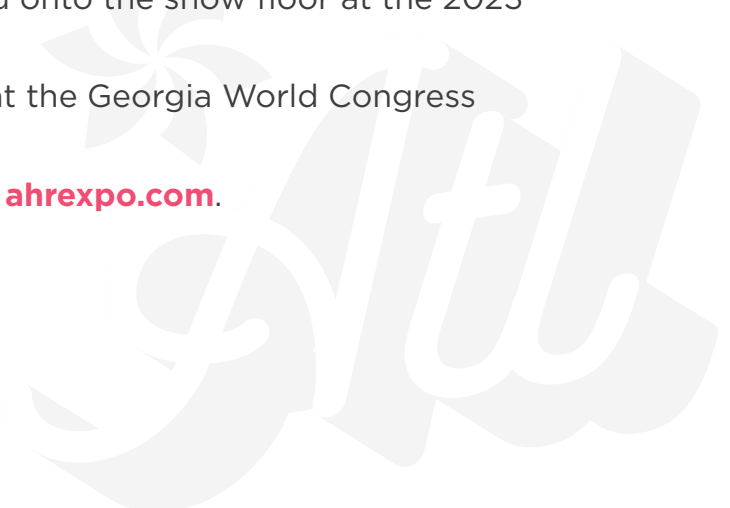
Our endorsing associations contribute a thorough representation of the varying roles that make up the full industry. This allows us to formulate discussion points that can be shared with peers when we gather face to face. We are appreciative of those who have taken time to participate in this report as we believe it lends tremendous value in understanding the challenges and opportunities within the industry from every point of view. As we've come to realize, our goals, even when executed differently, must be in sync to further the growth and success of this industry, a message that resonates wider with each passing year.

To compile this report, our respondents were asked to reflect on opportunities, threats and challenges to be considered for the near future as well as feedback regarding discussions happening in their specific areas of expertise.

We encourage you to review the input from our industry associations, manufacturers from the show floor and experts working in the field and carry this knowledge with you onto the show floor at the 2023 AHR Expo in Atlanta.

The 2023 AHR Expo will be held at the Georgia World Congress Center February 6-8.

For more information, please visit [ahrexpo.com](https://ahrexpo.com).





# Table of Contents

**Summary Takeaways & Common Industry Themes** →

## **Industry Associations**

ASHRAE →

AHRI →

ABMA →

BACnet International →

CABA →

Green Mechanical Council →

HARDI →

HVI →

**From the Floor** →

**From the Field** →





# Summary Takeaways & Common Industry Themes

## **Regulations remain a driving force towards a cleaner future**

- Decarbonization
- Green Transition
- New standards with quicker onboarding
- M1 and refrigerant updates

## **The built environment is evolving**

- New demands for efficiency
- IT and the connected consumer
- Automation
- Awareness of longterm benefit with higher performing systems

## **Supply Chain Recovery**

- New practices adapted out of necessity
- New ways of moving product across the chain
- Rebounding and future planning
- Transportation models

## **Inflation and Recession**

- Forecasts and planning
- Expectations
- The new role of HVACR in the budget

## **Workforce and training**

- The need for a strong and skilled workforce
- Projected increasing demands for the industry
- Flow of information across the chain: IAQ, changing regulations, application updates

## **Cybersecurity**

- Building Control
- Threat considerations
- Planning for a connected future

## **Expansion, growth and meeting demand**

- Managing multiple areas of growth within the industry
- Educating first the workforce, and secondly the end user
- Managing and meeting expectations- the consumer is more involved than ever



# ASHRAE

ASHRAE is a diverse organization dedicated to advancing the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. They have over 51,000 members globally including 5,500 student members in over 400 branches.

[ashrae.org](http://ashrae.org)

**Booth #B1638**

Located in 130 countries & 15 regions  
199 chapters

## A 2023 View of ASHRAE



**FAROOQ MEHBOOB**  
President, Fellow  
ASHRAE

### The Current State of HVACR

“ It is imperative that we continue to **hunger for and seek information about our market, our changing world and our technological advances.** Embracing change will infuse a new dynamism in our industry at all levels, bringing new knowledge, technology and tools in a timely fashion, helping us to successfully navigate the rapidly changing world.”

#### STEPPING UP



As an industry and as individuals, we have experienced the profound and lasting impacts of a global pandemic. **It is an honor to be a part of an industry that proactively faced the challenges precipitated by the pandemic, becoming a solid resource for the public, policymakers and the media** in providing answers, posing solutions and preventing the spread of misinformation as it relates to HVACR.

#### STAYING FOCUSED



The challenge doesn't stop here. It is the obligation of our industry to **provide practical information and keep building readiness top of mind as the current pandemic continues and as we prepare to face the next.** The nature of the challenge may change, actual conditions at any specific building will vary, and the adjustments that should be made will depend on many factors such as local climate, complexity of systems involved and the use, occupancy and activities that occur in and around a building. **As an industry, we must remain focused and maintain our position of leadership and preparedness.**

#### EMBRACING TECHNOLOGY



As we navigated the challenges of the pandemic, we all learned how to maintain connections and continue to engage using the power of virtual communications. While we will never be able to replace the power of face-to-face connections with our colleagues, **we have been able to utilize new technologies to enhance global communications.** This empowers us as a Society and an industry to address the global challenges to come.

### Upcoming Opportunities



#### IMPACT ON GLOBAL CLIMATE CHANGE

As the HVACR industry became emergent leaders in addressing the spread of airborne diseases during the pandemic, **we have an even greater role to play in addressing global climate change and its impact on the built environment.**

• We have an opportunity to continue our engagement and education among the public; policymakers; media; and building owners and operators about the urgency of building decarbonization.

# A 2023 View of ASHRAE continued...



## Challenges Ahead

**The Impact of the Built Environment Global Climate Change:** The challenge lies in the success of our mission to mitigate the negative carbon impact of buildings on the environment.

In July, we issued the **ASHRAE Position Document on Building Decarbonization** which presents the **Society's positions and recommendations for achieving a reduction in emissions** through the renovation of existing building stock and improvements to new building designs.

ASHRAE's position is that **decarbonization of buildings and its systems must be based on a holistic analysis** including healthy, safe, and comfortable environments, energy efficiency, environmental impacts, sustainability, operational security and economics.

By 2030, the global built environment must at least halve its 2015 greenhouse gas (GHG) emissions, whereby:

- All new buildings are net-zero GHG emissions in operation
- Widespread energy efficiency retrofit of existing assets are well underway
- Embodied carbon of new construction is reduced by at least 40 percent. **↓40%**

## Upcoming Opportunities



### IMPACT ON GLOBAL CLIMATE CHANGE

In 2021, ASHRAE formally participated as a **non-governmental organization and official observer at the UN's COP26 event**. We highlighted the world's growing building stock and the role of built environment organizations, such as ASHRAE, in **assisting both policymakers and industry leaders in better understanding their impact on our climate change solutions**. ASHRAE hopes to participate in COP27 and exchange more insights.



**The ASHRAE Building Decarbonization Task Force is providing solid guidance for those who are wanting to reduce the impact of buildings on CO2-equivalent emissions.** And the good news is building owners and operators have become much more aware and more willing to proactively address the issue. More importantly, through the work of our Society and our industry, they are understanding the need to act quickly to minimize the impact on global climate change.

## HVACR's Pressing Issues

Jurisdictions globally are **confronting climate change and recognizing that building decarbonization** is an important component in their efforts.



The worldwide building sector accounts for about **40% of energy-related carbon emissions**



buildings remain a major sector that lack sufficient mitigation policies



ASHRAE's flagship **Energy Conservation Standard 90.1 is the benchmark for commercial building energy codes in the United States** and has been a key basis for codes and standards around the world for more than 45 years, reducing energy consumption by 50%, yet only 38 countries have specifically named building standards and codes in their Nationally Determined Contributions.

As the standards authority for energy usage in buildings, ASHRAE has expanded the Society's long-standing initiatives in energy efficiency to building decarbonization.

## Highlight the Positive



ASHRAE's industry leadership did not start with the pandemic and does not end with pandemic. **The HVACR industry has a much larger role to play by expanding our voice** and continuing to use mainstream media as a channel to educate the public and policy makers.

- To do so, however, **we must take the time to better educate reporters at local, state, national and international media outlets**. ASHRAE is committed to breaking out of industry silos that may exist and use layman's terms to highlight the positive contributions of our industry to a more mainstream audience.

## A 2023 View of ASHRAE continued...



### ASHRAE Member Discussions

What determines how quickly we can react and adapt depends in great part on how well attuned we are to developments and how willing we are to embrace change. **Diversity, Equity and Inclusion are imperative to addressing the global challenges we are facing. We need to be diverse, equitable and inclusive to see, understand and take advantage of what is changing, for our success.** Diversity has many shades of meaning. For an organization to be truly diverse it needs to have diversity of ideas and views and these ideas and views can be freely discussed in a transparent and participative manner in a welcoming home. This mindset will translate through the innovations that we see on AHR Expo show floor.

“ In 2020 when COVID struck, we rose to the challenge and conclusively demonstrated that COVID is airborne. **The ASHRAE Epidemic Task Force provided invaluable guidance and set new benchmarks for buildings in the post pandemic era.**”





# Air-Conditioning, Heating, and Refrigeration Institute (AHRI)

Our industry comprises residential and commercial air conditioning and space heating, water heating, and commercial refrigeration equipment. It doesn't include so-called "white goods" – room air conditioners or residential refrigerators – those are in the purview of the Association of Home Appliance Manufacturers.

[ahrinet.org](http://ahrinet.org)

**Booth #B1539**

325 member companies

Sectors: Applied; Heating; Refrigeration; Unitary

## A 2023 View of AHRI



**STEPHEN YUREK**  
President & CEO

### The Current State of HVACR

“ Our industry has proved strong and resilient through the long pandemic. Not only was it finally recognized for its essential role in our society, but the industry actually grew since 2020 because our customers realized its vital role in so many aspects of their lives.”

#### SHIFTING FOCUS



As energy prices continue to rise, consumers are more aware than ever of the importance of energy efficient equipment, and our industry is well prepared to fill that need.

In addition, our expertise in indoor air quality has taken center stage as schools, commercial buildings, and even consumer residences are being retrofitted with the latest innovative IAQ equipment.

### Sector Hot Topics

#### QUALIFIED REFRIGERANTS



The hottest topic – and most pressing issue – is ensuring that refrigerants set to replace high-GWP HFCs are approved for use in all 50 states. While we are making considerable progress, we have some distance to go before the 40 percent HFC reduction set to occur at the beginning of 2024.

#### SUPPLY CHAIN ISSUES



Another, perhaps equally hot, topic is the ongoing supply chain issues that have greatly impacted our members' ability to fulfill demand in a timely manner. AHRI members and staff have spent considerable time and resources seeking ways to ameliorate the issue, including working with the Department of Commerce, the International Trade Administration, the Department of State, and other entities on potential solutions.

#### TAX INCENTIVES

Finally, now that Congress has passed legislation providing considerable tax incentives for the purchase of certain energy efficiency HVACR and water heating equipment, making sure consumers are aware of the incentives, and also working with states to craft their own incentive programs to utilize federal funds, are certainly hot issues for the coming few years.



### HVACR's Pressing Issues

Certainly the most pressing issues facing the manufacturing side are continued supply chain issues and also ensuring that next-generation refrigerants will be able to be used in residential applications across all 50 states by mid-decade. Considerable progress has been made on the latter; the former thus far has defied a solution.



# A 2023 View of AHRI continued...



## Challenges Ahead

Certainly high on our members' radar is a **solution to the supply chain issue for the long term**. The current situation is unsustainable and is leading members to re-evaluate the sourcing of components to better ensure reliable availability in the future.

## Upcoming Opportunities



I think we have an excellent opportunity to **dramatically accelerate replacement of the current installed base of ACs, furnaces, heat pumps, boilers, and water heaters with newer, far-more-efficient units** due to the very generous tax incentives passed by Congress this year.

## Current Trends

### DECARBONIZATION



The AHRI Board of Directors just last year approved a decarbonization statement reiterating the association's position in support of efforts that reduce carbon emissions while ensuring continued affordable consumer access to HVAC and water heating products and equipment that meets their needs.

### ELECTRIFICATION



The Board statement reiterated **AHRI's continued opposition to non-beneficial electric-only policies** that restrict consumer choice.

### IAQ



**Indoor air quality has taken on new urgency** in the wake of the pandemic, with schools, commercial entities, and homeowners seeking additional ways to ensure proper air quality. Our members have excellent solutions.

## Industry Shifts



There appears to be a **full-court press on efforts to get consumers to choose heat pumps to both heat and cool their homes**. The White House invoked the Defense Production Act in an effort to increase production (which was not lacking), and Congress appropriated huge amounts of money for tax incentives to encourage the purchase of heat pumps and many other types of highly energy-efficient equipment.

## Highlight the Positive



As we always have, we have a good story to tell with respect to innovations in comfort heating, cooling, water heating, and commercial refrigeration. **We make the most innovative, energy efficient products and equipment available anywhere in the world, and the current highlighting of the importance of our industry provides an excellent opportunity to tell that story in ways that previously might not have been possible.** I can assure you, for example, that reporters are far more knowledgeable on the importance of indoor air quality, on the manufacturing process, on heat pump production, and on the importance of a reliable supply chain than ever before!

“This is a dynamic, changing, exciting time for our industry, as we are finally recognized for our essential role not only in keeping our customers comfortable, but also safe and healthy.”



# American Boiler Manufacturers Association

[abma.com](http://abma.com)

Since their founding in 1888, the American Boiler Manufacturers Association (ABMA) has advocated for the safe production and operation of boilers, facilitated advances in energy efficiency, and provided solutions for our member companies. Throughout their history, the boiler industry and their 120 members have relied on the ABMA to lead the industry as it tackles challenges and embraces opportunities in our constantly evolving sector.

**Booth #B3939**

## A 2023 View of ABMA



**SCOTT LYNCH**  
President & CEO

### The Current State of HVACR

“ We see a mix of challenges and opportunities – **business is out there and while supply chain issues have improved, they are not back to normal.**”

#### MAKING ADJUSTMENTS



Many companies have diversified their product lines to expand opportunities and we expect inventory levels to increase and **companies leaving behind some just-in-time processes.**

#### RECRUITMENT AND RETENTION



The recruitment and retention of workforce in the boiler industry continues to be a **top challenge for our members.**

### Current Trends

#### DECARBONIZATION



This is a **buzz word in the sector but also a shift and our members need to pay attention.** We have focused a number of sessions at our recent events on this topic to obtain insights from all parts of the supply chain.

#### SUPPLY CHAIN



Our supply chain challenges **continue to focus on the availability of certain materials needed to complete projects.** This has led to project delays and unknowns in project completion.

#### WORKFORCE DEVELOPMENT



ABMA has engaged universities and trade schools in Tulsa, Houston and Dallas to **pilot opportunities with the boiler industry and our local members.**

### Industry Shifts



Pricing pressures throughout the sector have made it **difficult to quote projects at an accurate price** for a future project completion date.

### Upcoming Opportunities



Enhancing **customer education to ensure products are operated safe** and effectively.



### Big Impact Innovations

The connected boiler room continues to evolve and technological advances speed up every year. **Connectivity offers great opportunities but safety needs to a major focus.**

BACnet (Building Automation and Control Network) is the global data communications standard for building automation and control networks. It provides a vendor-independent networking solution to enable interoperability among equipment and control devices for a wide range of building automation applications. With over 150 corporate members including the world's leading building controls companies, BACnet also has more than 10,000 individual members.

**Booth #C5400**

## A 2023 View of BACnet International



**ANDY MCMILLAN**  
President and  
Managing Director

### The Current State of HVACR

“Rapid change in the energy landscape, the global economy and public health awareness has created a very dynamic environment for the HVACR industry. **Organizations that welcome change and embrace flexibility can take advantage that dynamism to position themselves as the industry leaders of the future.**”

#### WORKING TOGETHER



The external forces acting on the industry have increased in magnitude and volatility over the past few years. Things are not going to settle down anytime soon. If anything, the rate of change and the impact of those external forces on the industry will increase.

- This creates great challenges and equally great opportunities. The importance of moving quickly and collectively as an industry is becoming increasingly important. **Associations and other organizations that facilitate collective industry education and action are uniquely positioned to provide critical industry support and leadership in these times of rapid change.**

### Sector Hot Topics

#### JOINING IT AND OT



In building controls there is increasing recognition that all parts of the building infrastructure are related and need to be managed collectively. The digital and management chasms that frequently separate IT (Information Technology) and OT (Operational Technology) is being discussed and in many areas work is underway to address the issues.

#### CYBERSECURITY



There is little debate that improvements are needed as the digital world becomes a more dangerous one. **Adding more inherent security to building control systems has been the object of recent extensions to the BACnet standard and more are on the way.** Bringing those changes into products and installations is now becoming a greater focus of attention.

# A 2023 View of BACnet International continued...

## Current Trends

### WORKFORCE DEVELOPMENT



Building automation is a high-tech industry involving extensive distributed computing systems and advanced software. As such, it **faces the same workforce development and retention challenges as other high-tech industries**. Solving the problem is going to require real innovation in how people are educated and credentialed.

### AUTOMATION



Building automation is essential to delivering on the multi-dimensional business challenges facing building owners and operators. Managing energy, comfort and safety in a building while being responsive to dynamic regulatory and economic environments depends on being able to change the performance characteristics of a building without refitting it. **The rapid evolution of sensors, data analysis capabilities and AI are all contributing to a new generation of automation that better matches these requirements.**



### Big Impact Innovations

Technical innovation in mechanical systems and automation systems have had, and will continue to have, a large impact on the industry. However, too much of what is already possible technically is not realized in real systems over time. So, I think innovation in building operations user experience and innovation in workforce development have enormous impact potential because they can change that. Fully realizing the capabilities of technologies already available across the whole built environment is a huge latent opportunity.

### Industry Shifts



There has been a **meaningful shift from talking about cybersecurity in building automation to doing something about it**. Look around the show floor in the automation pavilion and you will see companies starting to offer products with BACnet/SC (which BACnet with encryption and authentication).

### HVACR's Pressing Issues



Managing through rapid change characterizes the challenge in every aspect of the HVACR industry. In addition to technological change which we have experienced for some time, we are now also faced with rapid change in the global economy, geopolitics, energy ecosystem, worker expectations and public policy. **The most pressing issue for our industry may simply be figuring out how to deal with so much change on so many fronts, simultaneously.**

### Upcoming Opportunities



Policy makers are looking for ways to continue working toward CO<sub>2</sub> reduction despite recent challenges in the energy sector. **The HVACR industry has an opportunity to step up and serve as a vehicle to accomplish that through more rapid deployment of controls in existing buildings.** We also have an opportunity to drive dramatic improvements in building operations by incorporating consumer electronics approaches to user interfaces and interaction models in building automation systems.

### Highlight the Positive



Much of the good we can do in the world is impacted by public policy and regulatory decisions. Since mainstream media impacts public perception of our industry, it also influences policy makers and regulators. **Professionals in our industry help most when they provide mainstream media with accurate information tied to the impact on the lives of ordinary people ... especially when it is delivered without technospeak.**

### Important Discussions



There is growing awareness of the importance of building cybersecurity but limited clarity about what organizations can or should do about it. **Our members will be on the show floor looking for products and partners who can help them accelerate their progress in this area.**

### Facts and Figures

The **need for cost-effectiveness and flexibility** continues to drive building automation specifications toward flexible, global standards.

For example, the most recent data shows

**64%** of systems globally specify the BACnet standard for data communications





# Continental Automated Buildings Association (CABA)

[caba.org](http://caba.org)

The Continental Automated Buildings Association (CABA) is a leading international, not-for-profit, industry organization that promotes advanced technologies in homes and buildings. Its 385 strong corporate members and 27,000+ individual industry contacts are leaders in advancing integrated home systems and building automation worldwide.

Booth #C5341

## A 2023 View of CABA



**GREG WALKER**  
President & CEO

### The Current State of HVACR

“ There currently exists a large market for new technology and new opportunities for the HVACR industry. This **new technology is bringing better efficiency, less energy consumption, and lower CO2 emissions from electrical generating plants**, and rightfully so as there currently exists a real concern for energy supply and the environment.”

#### ENVIRONMENTALLY CONSCIOUS



There has been a spiking demand for environmental, social, and governance (ESG) products. A major part of this growth has been driven by the environmental component of ESG and responses to climate change. As a result, **the industry is becoming more conscious and is evaluating exactly how major of a role in reducing energy usage and emissions, HVACR plays.**

#### IAQ



In terms of members, we have 385 organization members, and in the past year, we saw a number of members in the HVACR industry join. Collectively, these **members reveal the industry's growing interest in innovations** like remote control of HVAC technologies, artificial intelligence, and occupancy sensing and its implications for IAQ management.

### HVACR's Pressing Issues



Rising temperatures and the fast-paced construction of residential and commercial properties have been **driving the demand for HVAC systems across the globe. The concern is whether that demand can be met.** Up until recently, the industry has been dominated by workers from the baby boomer demographic. Now, this same industry is experiencing a shortage in labor.

### Upcoming Opportunities



Building Automation & Control (BAC) technologies are **continuously evolving and more recently expanding to include the Industrial Internet of Things (IIoT) and Industry 4.0, artificial intelligence (AI), and security.** There lie unique and exciting opportunities for HVACR to tap deeper into this sharing of information and communication.

# A 2023 View of CABA continued...



## Challenges Ahead

Two years after the start of a historic pandemic, many building-upgrade “early wins” are now in the past. This can make **arguments for further technology deployments – and in favor of “health-centric” buildings in the broadest sense – a more challenging prospect.** To be sure, in 2022, the ability to provide assurances about air quality aspects to a building occupant has become fundamental to supporting a safe return to the office; but **it would be a mistake to think that healthy building concepts and deployments have become well established.** The coming years will now test the resilience of the healthy buildings concept and its evolution to support new capabilities. The CABA Board of Directors recently launched “Healthy Buildings and Indoor Environmental Quality” as our 2022 research project for the large buildings segment to examine business strategies and product and service offerings that are most likely to outlast this pandemic and thrive well into the future, as well as take an in-depth look at key market trends and forces that will support industry participants in advancing healthy buildings.



## Important Discussions



The pandemic has deepened a focus on how people experience buildings and the technology that can enhance their safety and peace of mind. **Investments in healthier buildings through technological implementation are showing a large return in value.**

## CABA by the Numbers

It is predicted that the HVACR industry will offer approximately



**15%** more jobs by 2028

and is expected to reach an estimated

**\$370B**

market size by 2030

This prediction is based on the growth of the construction industry, which we know is very closely tied to the HVAC industry.

“CABA members collectively bring extensive knowledge of healthy buildings and homes to the forefront. **One of our goals is to provide strong support to help organizations advance and promote the growth of HVACR technologies.**”







# Green Mechanical Council

[escogroup.org/greenmech](http://escogroup.org/greenmech)

The Green Mechanical Council, an affiliate of the ESCO Group is an association of more than 360,000 individuals. Representing those who manufacture, design, build, install, maintain, and service the energy efficient and environmentally responsible mechanical systems built or retrofitted into today's commercial, industrial, and residential structures.

## A 2023 View of Green Mechanical Council



**HOWARD WEISS**  
COO; Executive  
Vice President,  
ESCO Group

### The Current State of HVACR

“ There’s a new popular saying that “just OK is not OK”. While this is amusing in the popular TV commercial, **it does drive home the point that we should always expect more – i.e. excellence.**”

When consumers call for service on their HVACR equipment, they should feel confident the job will be done professionally. However, studies show that 68% of all air conditioning systems are improperly charged (a slight under or over charge effects energy consumption by 18 to 25%), 70% of all systems have improper airflow (improper airflow effects both running time and humidity decreasing energy efficiency), 91% of systems remain untested for combustion safety and efficiency (a small air/fuel ratio inaccuracy will affect energy efficiency by 18% to 20%). **HVAC equipment that is not properly Installed, Maintained or Serviced can lead to an increase in energy costs.**

As the HVACR industry now transitions to Low GWP Refrigerants, and equipment that runs on them, this provides an **opportunity for the industry to educate HVACR professionals, and validate equipment is running at maximum efficiency.**”

### How Things Are Changing

#### TECHNICAL REVOLUTION



The HVACR industry is in the midst of the most significant technological revolution ever! Flammable refrigerants, electronic technology, equipment tied to the cloud, efficiency ratings, mini-splits systems, new codes, and incorporating new control strategies into legacy equipment are examples of **industry segments that are transforming how HVACR professionals are trained, and how they do their jobs.**

#### OPPORTUNITIES IN EDUCATION



The good news is that new challenges also bring new opportunities! The HVACR industry can unite around education to help everyone understand the transformative changes, while reinforcing the basics. In doing so, we can **improve the performance of equipment, reduce energy cost, and help improve the perception of the industry as a whole.**

# A 2023 View of Green Mechanical Council continued...

## Current Trends

### ENCOURAGING EFFICIENCIES



The United States Department of Energy along with their international counterparts are putting forth initiatives for decarbonization and electrification. As a result, utilities are seeking ways to improve the efficacy of their grids, encourage more efficient use of consumed power, integrate renewable energy resources, all while reducing greenhouse gas emissions. As the HVACR industry moves away from fossil fuels, more stress is placed on power grids. To educate the HVACR industry on the new technologies that spearheading the electrification of our industry, **many utilities are offering great incentives for trained personnel to install, service, and maintain these more efficient systems.**

Similarly, the signing of the American Innovation and Manufacturing (AIM) Act, in December of 2020 began the phasedown of HFC refrigerants. Consequently, **the industry must prepare its workforce for the safe handling, storage, and transportation of Low GWP Refrigerants**, such as A2L's which are mildly flammable. Once again, this is an **opportunity for us to educate or reeducate the industry** in working with the next generation of refrigerants.

### HVACR's Pressing Issues

The HVACR industry always has challenges and strives to improve. **However, one area we continue to struggle to resolve year after year, is the technician shortage.** The pandemic provides us an opportunity to try a new approach.

When COVID-19 was declared a pandemic, all but seventeen occupational areas out of seven hundred tracked were ordered to stay at home. The pandemic should for many years to come provide an opportunity to explain the size, scope, and importance of the HVACR industry. This may include **discussing the HVACR industry as it pertains to the distribution of food, cold storage requirements to store and transport vaccines, chillers that keep refineries processing oil, airborne infection isolation rooms that helps prevent the spread of infectious diseases, indoor air quality and ventilation systems that allowed schools and businesses to re-open, how data centers that connect us must be cooled, and of course, keeping your home comfortable.**

It is up to all of us to educate the public, and potential recruits as to the size, and scope of our industry, while providing them a blueprint for possible areas of employment. **While there are so many great attributes to a career in our industry, with COVID-19 fresh on everyone's mind, it should be a powerful recruitment talking point.**





Our distributor members collectively employ 60,000 Americans and account for nearly 70% of the US Wholesale distribution market of residential and commercial HVACR equipment supplies and controls. HARDI currently has over 900 members. 440 wholesalers and over 460 total vendor, supplier, manufacturer reps and other associate members.

## A 2023 View of HARDI



TALBOT GEE  
CEO

### The Current State of HVACR

“ Our industry finds itself at a unique intersection. The pandemic made it difficult for distributors to function, manage and plan. And now, **with a recession on the horizon, it’s safe to say that demand for products from HARDI members will be softer in the year ahead.**”

The silver lining is that **distributors have become incredibly creative as they’ve had to adapt to the persistent challenge of long and unpredictable lead times.** As demand eases, so will the backlog of orders at suppliers and that will allow lead times to improve. Many HARDI members built in survival tactics that will see them through the challenges to come.”

### Sector Hot Topics

#### RISING COSTS



Distributors are grappling with **rising costs of operation, product, and SG&A.**

#### INVENTORY ISSUES



Because of supply chain delays, distributors need to keep more inventory. Not only are there **additional financial costs associated with carrying extra inventory, but operational efficiency is compromised** when trying to function around it.

### NEW REGULATIONS



As of January 1st, 2023, **there will be new equipment regulations and limitations.** There is concern about whether suppliers will be able to adequately support demand with appropriate product in the first half of 2023.

### THE PRESSURE IS ON



Labor challenges continue to be a concern. Between an aging work force, a lack of qualified candidates and two years’ worth of pandemic stress, **our members are feeling the pressure to maintain performance and production levels.**



### Big Impact Innovations

One interesting innovation we’re seeing is a **shift to outsourcing the last mile of delivery.** It is just the latest example of distributors distinguishing themselves by helping their customers be more productive and successful.

# A 2023 View of HARDI continued...

## Facts and Figures

The average sales growth for HARDI members participating in our TRENDS report has hovered between 24 and 25% since January '22. That sales growth is primarily caused by historic price increases. 24% sales growth does not equate to market growth.

Inflation is in the news and has been roaring in our industry. Hopefully the pace of inflation can ease, including in this industry. **Distributor sales growth will follow the inflation rate for our industry if it slows, but market visibility and health would improve dramatically.**

## HARDI by the Numbers

State of the Channel report

**\$75.1B**

Total addressable HVAC/R market (U.S.)

**\$47.3B**

Sales through HVAC/R wholesale distribution

## Current Trends

### DECARBONIZATION, ELECTRIFICATION AND GREEN TRANSITION



The push to decarbonize the U.S. economy is inextricably tied to grid and building electrification, and as a consequence, we've seen heat pump demand strengthen significantly in recent years. Since 2017, air-source heat pumps have grown from

**21% to 25%** of HARDI distributors' annual unitary sales

Furnace demand will decline if electrification is taking root. This year we have seen the **annual rate of heat pump shipments exceed furnace shipments.**

### REFRIGERANT REGULATION UPDATES + CHANGEOVER



The AIM Act and the HFC Phasedown schedule commenced this year and will have wide-reaching impacts on the HVACR market. The next stepdown, which is a 40% reduction, is right around the corner.

**Refrigerant reclamation will allow distributors to better bridge the supply gap and help customers reach sustainability goals.**

### M1 TRANSITION

Based on sales data gathered from HARDI distributors, we estimate that

**73%** of all split-system AC sales fell below a 15 SEER rating in 2022 whereas

**North:** 70% less than SEER 14

**Southwest:** 36% less than SEER 15

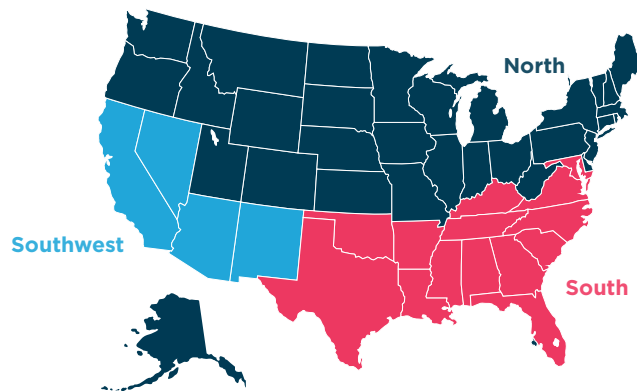
**South:** 71% less than SEER 15

**49%** of all split-system ASHP sales fell below a 15 SEER level.

**North:** 31% less than SEER 15

**Southwest:** 38% less than SEER 15

**South:** 64% less than SEER 15



### SUPPLY CHAIN: TRADE, TARIFFS, PROJECTIONS



Data suggests that the supply chain is in better health than it was a year ago. **HARDI members largely agree and report progress, but commercial appears to be struggling. There is progress, but gaps persist.** High distributor inventories coupled with easing demand will relieve pressure on the supply chain, allowing reliability to continue to improve.

# A 2023 View of HARDI continued...

“ Economic cycles are not extinct, and neither is extreme weather. The economy is slowing after the recent stimulus driven demand spike. Increasing interest rates and global disruptions are potent valid reasons to be turning to the next phase of the cycle. We do not expect a Great Recession scenario. **The job market remains very strong, and the shortage of labor argues against widespread lay-offs. It is safe to say demand for products from HARDI members will persist during the year ahead** like it did during the depths of the COVID uncertainty, but the demand is certain to ease in response to the monetary tightening and elevated uncertainty.

## Membership



Our distributor members:

collectively employ

**60,000**

Americans

&

account for nearly

**70%** of the US Wholesale  
distribution market

of residential and commercial HVACR  
equipment supplies and controls

HARDI currently has:

**920+**

members

→

**440**

wholesalers

&

**460+**

vendor, supplier, manufacturer reps  
and other associate members



# Home Ventilating Institute

[hvi.org](http://hvi.org)

Founded in 1955, HVI certifies a wide range of home ventilating products manufactured by companies located throughout the world which produce the vast majority of the residential ventilation products sold throughout the United States and Canada.

## A 2023 View of HVI



**PATRICK NIELSEN**  
Chairman of  
the Board

### The Current State of HVACR

“As the world continues to look for ways to keep up with energy efficient housing demands, our industry has never been more important. **Not only do we need to lead in terms of saving energy but also in terms of providing healthy dwellings.** The residential housing sector has never been more focused on indoor air quality and wellness.”

#### SHIFTING FOCUS



As technology is allowing builders and developers to make great strides in terms of tightening envelopes resulting in lower blower door scores, they are also understanding the need to accompany these airtight spaces with proper ventilation. **Many are changing their messaging to focus on indoor air quality and health as COVID has heightened families' awareness of the importance of the air they breathe.**

### Sector Hot Topics

#### CONTRACTOR TRAINING



The drive to make dwellings both healthy and efficient is leading to growth in the market for HRVs and ERVs. Builders/developers, specifying engineers, energy raters and contractors are coming to recognize that these units can provide great IAQ and do so without a great energy penalty. **A key challenge in the industry now is trade education. Contractor training is needed to understand the options for simple, effective installation.**

#### SMARTER VENTILATION



Also, there is increasing awareness of the **need for smarter ways to ventilate.** Rather than bringing in fresh air at a constant rate no matter the situation, the future will require us to **consider ways to vary our ventilation rates based on a number of inputs** such as occupancy, time-of-day, indoor pollutant levels and outdoor conditions.

#### IAQ



The pandemic will have long-lasting impacts on the value homeowners and multi-family tenants place on IAQ. In addition to the concern for spreading of disease, 20% of households include someone with respiratory issues. **For many years, the “V” in HVAC was somewhat forgotten. That is changing as people in all walks of life are more conscious of the air they breathe as evidenced by the growth in sales of IAQ monitors and portable air purifiers.**

• **HVI is leading the way by developing IAQ sensor testing and certification procedures** which will allow the industry to trust the quality and accuracy of these devices whether used for general homeowner use or incorporated into smart, connected systems.

# A 2023 View of HVI continued...



## Highlight the Positive

Our industry is uniquely positioned to **help the world by providing comfortable, healthy and energy efficient spaces** of all types.

## HVACR's Pressing Issues

A pressing issue in the residential ventilation sector is **education and contractor training, especially as it relates to H/ERV installation**. As the market grows, we're finding that many contractors who haven't worked with them previously are struggling with how to install them which causes them to overbid the labor component. Once they've installed a few units, they appreciate that they are relatively simple.





# FROM THE FLOOR



## The Current State of HVACR

“ The pandemic has changed our world. Working from home is now a norm, and people are investing in HVAC systems that improve comfort, indoor air quality (IAQ) and efficiency of their spaces. From a commercial building perspective, even as the COVID-19 pandemic continues to change, it has become clear that the traditional in-person workplace is still thriving with the help of HVAC and digital technologies. **The focus in buildings has shifted towards healthy operations, collaboration and a customizable employee experience.** Building owners and facility managers play a key role in creating an environment that invites employees to return by creating healthy and comfortable buildings that are centered around occupant well-being.

## Current Trends

### DECARBONIZATION

With nearly 140 years of making homes and buildings more sustainable, we are leading efforts to decarbonize the places we live, work and play. This includes solutions to facilitate the transition to electric-based heating such as heat pumps, as well as OpenBlue, our suite of connected solutions that help drive building system efficiencies. **Net zero leadership is easier than ever with our OpenBlue Net Zero Buildings offering, which is a proven path for organizations to reliably reach decarbonization and renewable energy goals, while optimizing building performance.** Digitalization is the key to opening new opportunities for decarbonization, as well as opportunities in other areas like IAQ, cost management and business continuity.

## A Changing Industry

The push toward decarbonization and electrification is accelerating, driven by climate change, the insecurity of world energy supplies and new legislation, like the Inflation Reduction Act.

**Both residential and commercial customers want more than comfort - they want healthy, energy-efficient homes and buildings.** They care about both the well-being of the planet and the comfort and productivity of people. **In response, they are investing in systems and technologies that ensure well-managed IAQ and optimizes energy use.**

Options like zoning and smart controls are must-haves as homeowners and building managers want to manage energy use and clean air simply and easily. All of this requires data and digital platforms like Open Blue that can connect operating, controls and information systems to achieve whole new levels of performance.

The pandemic has magnified the importance of wellness, ventilation, air quality, thermal health and humidity make up half of the nine key pillars of healthy commercial buildings identified by the Harvard School of Public Health. These findings, coupled with the launch of the U.S. Environmental Protection Agency's (EPA) Clean Air in Buildings Challenge earlier this year, make **HVAC performance and healthy indoor environments more important than ever before.**

The design, installation, operation and maintenance of a building's HVAC and ventilation systems can not only impact comfort, but optimize it for improved health. **Supported by an open digital platform and putting diverse data sets to work, buildings are transforming to flexible assets delivering spaces where people flourish and impact on the planet is minimized.** Having the right systems in place is a crucial first step to establishing building performance and supporting occupant well-being.

- According to our annual Energy Efficiency Indicator Survey, more than a third of respondents plan to replace fossil fuel heating equipment with heat pump technology in the next year, which is a 7% jump from what was implemented the prior year. Thermal energy storage leaped from 27% to 42% in the last five years, and more than half of respondents implemented electric energy storage in the past year. **Big incentives for heat pumps in regions like the Northeast, in combination with the Inflation Reduction Act, are making the value proposition easier for contractors to get buy-in from customers.**





Johnson  
Controls



DAVID BUDZINSKI

Vice President and General  
Manager, Residential and Light  
Commercial, Johnson Controls



## WORKFORCE DEVELOPMENT

Industry efforts to recruit and train the next generation of HVACR professionals continue, but there is always more we can do to strengthen our workforce. **The ongoing investments we've made in the Johnson Controls Ducted Systems Academy in Oklahoma has made the premiere facility an industry standout where HVAC professionals build technical, sales, leadership and professional skills.** Our contractors and distributor partners attend hands-on training in our world-class laboratory as well as remote live training sessions.

## Current Trends

### ELECTRIFICATION



Heat pump technology is advancing at a remarkable rate. Our latest heat pumps can address an increasing share of heating loads. **There are new, currently available developments in heat pumps that operate more efficiently at ever-lower temperatures and hydronic heat pumps for commercial buildings that can replace boilers.** For example, residential air-source heat pumps such as the YORK® YZV Variable Capacity Heat Pump, Luxaire® HL19 Two-Stage Heat Pump and Coleman® HMM7 Horizontal Discharge Heat Pump models can achieve 2.0 coefficient of performance (COP) or better and maintain 50-80% heating capacity at 5 degrees F - territory traditionally reserved for a fuel-combustion appliance.

**Everyone - from large corporations with decarbonization goals to homeowners who are conscious of their environmental impact - can reduce fossil fuel combustion through beneficial electrification.** Large energy users like campuses with district systems, hospitals and other large commercial buildings are achieving tremendous savings by replacing gas boilers with water-to-water heat pumps, which can push a COP to as high as 7. The barriers to electrification in retrofit applications are coming down; the new YORK® Sun™ Choice Heat Pump RTU can utilize existing curb fits and ductwork, while the YORK® CYK and YVWA heat pump chillers can be paired with existing hydronic systems to supply water hot enough for retrofit applications.

### REFRIGERANT REGULATION UPDATES + CHANGEOVER



It's more critical than ever to be at the forefront of environmental protection. **Embracing the low Global Warming Potential (GWP) refrigerant transition is one of many steps to help customers reduce their emissions and another positive step in supporting healthy people, healthy places and a healthy planet.**

- A2L refrigerants have different properties than A1 refrigerants, so it's **critical that contractors learn the safe use, handling and storage** and update their service equipment for compatibility.

## IAQ



The pandemic made clear how absolutely critical it is to have clean, healthy air in the spaces we live, work and play. This has also been backed by **scientific studies on IAQ and cognitive performance that demonstrate the impact of IAQ on employee productivity and satisfaction.**

## Sector Hot Topics

### DOE COMPLIANCE

After years of preparation, the Department of Energy (DOE) 2023 energy efficiency requirements for residential and commercial HVAC equipment will soon go into effect. This is a major transition for the industry, and we remain committed to supporting our dealers, contractors and partners to make it as smooth as possible. **It's critical that contractors understand which region they're located in - as specified by DOE - and the types of products they can install based on the region's efficiency requirements.** In addition to efficiency requirements, the region determines whether product compliance is based on date of installation or date of manufacture. To avoid stranded residential AC inventory that can't be installed after 1/1/2023, it's important that contractors have a solid phase-in-phase-out plan and are mindful about when they place last-call orders.

### INDUSTRY SUSTAINABILITY

Other efforts to reduce energy consumption and improve sustainability are top of mind across the industry, including decarbonization, and as part of that effort, electrification and smart buildings. As a DOE Cold Climate Heat Pump Technology Challenge partner and industry leader with best-in-class heat pump technologies across all building applications, **Johnson Controls is invested in the evolution of residential air source heat pumps that can reliably provide space heating while reducing the use of backup sources.**

Johnson Controls



DAVID BUDZINSKI

Vice President and General Manager, Residential and Light Commercial, Johnson Controls

## Industry Shifts

The world and industry have evolved and learned new ways to live in a pandemic. While we all hope that the worst of COVID is behind us, healthy air, climate and sustainability are driving the market as never before. The DOE 2023 energy efficiency regulations, low-GWP refrigerant transition and the Inflation Reduction Act all have major environmental components and provide new opportunities for HVACR professionals. **The credits and rebates provided by the Inflation Reduction Act provide a long-term opportunity for clean energy investment and new incentives for homeowners and commercial building owners to consider higher-efficiency comfort systems.**



## Challenges Ahead

The industry is facing back-to-back regulatory changes. DOE 2023 is closely followed by the EPA transition to low-GWP refrigerants in 2025. Distributors and contractors that have developed solid phase-in/phase-out plans have an advantage, and at Johnson Controls we are pleased to say our line card is ready to go and we are ready to be a resource to our partners in navigating the change as well.

## BUILDING VENTILATION

When it comes to clean air in commercial buildings, ventilation, filtration, humidity, disinfection and monitoring are all critical, and fresh air is key to a healthy indoor environment. **In larger capacity situations, the addition of a dedicated outdoor air system may be required to meet the building's ventilation needs. Properly treating both outdoor and recirculated air is required to eliminate pollutants and irritants.** High-efficiency filters mechanically remove particles from the air to improve IAQ levels. Maintaining optimal space temperature and humidity levels not only provides a more comfortable workplace, but it also works to destabilize pathogen transmission and prevents mold and mildew growth within the system and throughout the building. When recirculated air is present, UV-C disinfecting lights applied in air handling systems can be used to create a healthier environment. Effective for both surface cleaning and air cleaning, UV-C systems help eliminate fungus and mold that may form on an HVAC system's coils as well as reduce and deactivate any airborne viruses or bacteria not captured by filtration.

## SMARTPHONE APPS

System performance and building environment data can be used to inform decisions that promote safety, productivity and occupant satisfaction. This can be advanced through smartphone apps that make building data transparently available to all occupants. **Apps also allow occupants to communicate directly with facility personnel about building and room conditions like temperature, lighting and occupancy.**

## HVACR's Pressing Issues



The Department of Energy 2023 deadline is quickly approaching. These are huge changes our industry has been preparing for years. They impact both residential and commercial markets, and we've all had to adjust to different regions, efficiencies, metrics and testing procedures. We've been committed to helping contractors, distributors and our partners prepare and address challenges, and we've made significant investments to ensure our products are ready by the deadline. **It's more important than ever that original equipment manufacturers, distributors, contractors, building managers and homeowners are communicating like never before to ensure transitions happen as smoothly as possible.** Johnson Controls has been working closely with channel partners to ensure that they're prepared for the transition, and has created a library of resources available online at [johnsoncontrols.com/doe](https://johnsoncontrols.com/doe).

## Facts and Figures

Our 15th annual Energy Efficiency Indicator Survey, collected responses from 1,000 participants globally between November and December 2021.



**62%** of organizations surveyed expect to increase investments in energy efficiency, renewable energy or smart building technology

• This marks a return to pre-pandemic investment levels.

However, despite this commitment, organizations still face challenges to accelerating their efforts, with nearly

**two-thirds** of those surveyed

claimed to struggle to scale sustainability initiatives across buildings, geographies or business units.

• That makes our innovative heat pump technologies, OpenBlue platform and Net Zero as a Service partnership offering the right solutions at the right time.



Johnson  
Controls



DAVID BUDZINSKI

Vice President and General  
Manager, Residential and Light  
Commercial, Johnson Controls

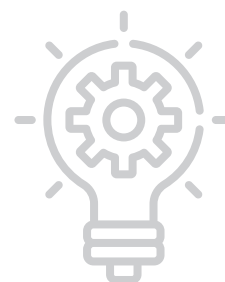
## Big Impact Innovations

With the industry's focus on electrification and decarbonization and its extensive investment in technology, **heat pumps are solidly positioned to make a huge impact. Innovation in heat pump technology is unfolding rapidly and the space is incredibly dynamic**, and as a result, heat pumps are able to address an increasing share of heating loads.

However, it's important to note that most air-source heat pump systems need to include some form of backup or supplemental heat that is utilized when the building heating demands exceed capacity, such as when the outdoor temperatures are too cold for the heat pump to run efficiently. **Using gas for supplemental heating will often result in lower operating costs and source emissions compared to electric resistance for space heating, but results will vary on a building-by-building basis.** In particular, the carbon emissions that are attributable to electrified heating systems are highly dependent on the emissions factor of the local grid.

As we continue the build out of a smart, zero-carbon electricity system and buildings-to-grid infrastructure, **we envision a future where full electrification makes sense for all buildings.**

It's also important to understand the **revolutionary impact of data and digital technologies in 2023.**



“Successfully reaching global sustainability and environmental goals requires intentional planning and responsible investments in digital solutions and technologies that will protect our planet for generations. **At Johnson Controls, we continue our commitment to developing best-in-class products and solutions that help transform the environments where people live, work, learn and play.** We're devoted to creating spaces that attract the best talent, support the most successful enterprises and ensure the highest level of comfort, while helping achieve sustainability goals.”



## The Current State of HVACR

“The HVACR industry is still strong, and we see it continuing to be strong as residential and commercial markets alike are continuously looking for more efficient and environmentally friendly ways to stay comfortable. Duct-free and Variable Refrigerant Flow (VRF) growth is also still outpacing traditional solutions in the HVAC industry, depending on the type of application.”

## A Changing Industry

There are three changes in the industry that I've seen affecting our business: electrification, refrigerant changes, and hybrid systems.

Electrification is exciting in that it is driving us away from fossil fuels to cleaner heating and cooling technologies like heat pumps. You see heat pump technology continue to gain share of the overall HVAC market. VRF is well positioned to take advantage of this.

While that is happening, the industry is still trying to manage the refrigerant changes that will be implemented over the next few years. The good news is that it will make our products more efficient while lowering the GWP impact on the environment as well.

Lastly, I've seen an increase in the use of hybrid systems, meaning a mixture of different components of traditional systems. The inverter compressor technology of VRF, for example, is being coupled with air handler units and hydronic systems to make both better.

## Current Trends

### DECARBONIZATION/ELECTRIFICATION



The industry's push toward decarbonization and electrification is being directly affected by state and federal regulations. It's still not clear how funds allocated in the Inflation Reduction Act will alter state and/or local rebates that encourage fossil fuel reduction. **We believe that the most progress in these areas will be made where the state government and/or utilities take advantage of those funds to drive change.**

### REFRIGERANT REGULATION UPDATES + CHANGEOVER



As the industry moves to a refrigerant with less GWP impact, **there will need to be code adjustments to allow for the proper use of an A2L refrigerant in residential and commercial markets.** This has been successfully accomplished in other countries around the globe that have already changed refrigerants, so it's just a matter of making sure we enable the more efficient technology with proper regulation.

### IAQ



This will continue to be an ongoing priority, which is why **we continue to focus on IAQ feature additions to our equipment**, as well as incorporating direct outside air system options to our VRF systems.

### SUPPLY CHAIN: TRADE, TARIFFS, PROJECTIONS



For LG, **we've overcome most of the supply chain issues that affected the industry in 2022.** We expect to continue experiencing increased inventory levels across all our products in 2023. Although other manufacturers and distribution may still be experiencing challenges in this area, we do not expect supply chain issues to impact our inventory moving forward.

### WORKFORCE DEVELOPMENT



**The continued replenishment of trained and experienced HVAC professionals both pre- and post-installation is more important than ever.** As our industry becomes more efficient and incorporates better technologies, OEM's, engineers, and contractors need to make sure they have the right people to design, install, and service systems. Everyone is looking for good people.



**Air Conditioning Technologies**

## DOUG BOUGHER

Director of Applied Sales; LG Air Conditioning Technologies, USA

## Sector Hot Topics



LG has recently introduced an inverter scroll heat pump chiller, which is generating discussion within the industry. This new product, which combines the technology of VRF with the benefits of a traditional modular scroll chiller, offers opportunities to advance the three industry trends I identified earlier (electrification, refrigerant changes and hybrid systems).

## Highlight the Positive



We are continually improving our technology to provide a more connected, more comfortable experience, all while providing opportunity to reduce fossil fuel use and increase efficiency. **Not many industries can improve what they do, make people more comfortable, and provide consumers with an opportunity to improve their environment at the same time.**



## Big Impact Innovations

The use of inverter compressors in more hybrid systems will allow for a convergence of technology that will bring the best of all systems into one place. This can help optimize efficiency, customer comfort and control, all while reducing the impact on the environment.

## HVACR's Pressing Issues



Managing the **changing landscape of technology, regulation, funding, and trained workforce**, especially given that these issues are all interrelated.

## Upcoming Opportunities



Those companies that have inventory of **product that supports current priorities, like decarbonization and efficiency**, will have a great opportunity to win.

- Yet changing regulations and law that focus on decarbonization, electrification, and refrigerant changes will prove to be challenging.

## Important Discussions



Our concerns are our customers' concerns, and we are **aligned in working to manage the changing landscape of technology, regulation, funding, and a trained workforce.**



## The Current State of HVACR

“Rheem focused on keeping our team members safe while finding ways to continue to build products. All our facilities continued to operate with safety measures in place, allowing us to continue to provide products to our contractors and distributors. We were all surprised by the elevated level of demand the industry experienced as consumers were now working from home. The HVAC industry has continued to see elevated levels of demand since 2020 as consumers renovated and spent money on their homes during the pandemic. **As a privately held company, we see a potential recession as a chance to invest in our business for long-term growth.** For example, we are now launching all new products to meet the new efficiency requirements and expanding our manufacturing facilities.

On the commercial side, there was a bit of a slowdown in 2020 as businesses remained generally closed, but **there has been a lot of activity on both new construction and planned retrofits since 2021.**”

## Current Trends

### DECARBONIZATION



Producing millions of heating, cooling and water heating products across the world per year that consume energy, Rheem plays a very natural role in decarbonization. Decarbonization is not only driven by regulations, but also an expectation of our customers. We have solutions that will support decarbonization while being cost and performance effective for our customers. **Our investments in decarbonization technologies will continue to increase, and collaboration with key strategic partners will accelerate our learning.** And since decarbonization goals are global in scope, we are well suited to engage all of Rheem to develop the right solutions for our customers and the planet.

### M1 TRANSITION



We are launching an entirely new residential platform to meet the new efficiency requirements. **This new platform will provide energy-efficient solutions for all sizes of products to allow contractors and homeowners the choices they need to fit their applications.** Our new residential platform will also include technology to make installations easier for contractors and provide connected solutions for homeowners. In addition, we are launching new heat pumps that allow for a wider range of installs in all climates.

**Our new line of commercial products is designed with features that make it very easy to install and service.** Some of the products that we've either launched in the last few months or are about to launch in the next few months include Dedicated Outdoor Air Systems, UV lights, high efficiency filters, 30-ton rooftop with VAV, and 15- & 20-ton packaged heat pumps.

### WORKFORCE DEVELOPMENT



Rheem has partnered with Military Hire to help our Pro Partner contractors attract and hire new people into the industry. We are also **continuing our channel partner training programs, both in person and virtually, and will have nearly 100,000 participants in training this year alone.** Additionally, the new technology in our equipment is making it easier for technicians in the field to diagnose and correct equipment performance issues, enabling newer or less-experienced technicians to be more effective quickly.



**RANDY ROBERTS**

Vice President, Sales and Marketing,  
Rheem Air Conditioning Division



## Big Impact Innovations

The **technology being built into our new line of equipment has a huge impact**, providing easier installation and service for the technicians and better comfort for the end-user customers.

## Upcoming Opportunities

“We are excited about the entire **new line of residential products we are launching to meet the new efficiency requirements**. These products are filled with features that will benefit both homeowners and contractors.”

Technology is expanding quickly in HVAC and our new products will **make installations easier for contractors while providing homeowners instant visibility** to the performance of the equipment. In addition, we are investing heavily in heat pump technologies to help consumers with sustainable solutions that limit our carbon footprint.

There are new efficiency requirements for commercial products as well and Rheem is ready with the compliant offering. **We also are continuing to invest in IAQ solutions, controls and higher efficiencies, to stay ahead of the market trends**. Since COVID, fresh air, filtration and other IAQ options have become a key focus for commercial buildings.



## Industry Shifts



The regulation changes for testing standards and product efficiency are **driving innovations in product**.

## HVACR's Pressing Issues



The current state of the global supply-chain has put a strain on the entire industry, for everyone in the channel. **Our procurement team and our leadership have worked tirelessly to solve issues and address the challenges as**.



 **@hoosier\_hvacr**

**Dave Elliott, HVACR/Electrician**  
*32 years in the industry*

“ It’s a supply and demand world right now. Today’s price isn’t yesterday’s price, you have to stay sharp. Planning projects is risky, profit margins can be lost on material costs.



**What opportunities are ahead for HVACR in the coming year?**

Opportunities are endless to grow, to sell a better product. The standard single stage HVAC equipment is a thing of the past. Consumers are willing to invest in more complicated energy efficient equipment.



**What are the most pressing issues facing HVACR right now as an industry?**

Supply chain issues - it’s a issue across the country and in my area. Another huge issue is staffing. Building up the trades has never been so evident. It’s effected the large shops down to the mom/pop operations.

## In a Nutshell

- Business is great - has been throughout COVID. People have spent more time in their homes last two years. Efficiency and IAQ are at a all time high on consumers first thoughts.
- A big shift has been being prepared and trying to stock the most used parts. If it’s at a supply house today, no guarantees of having it tomorrow. Adjusting to overstocking and trying not to get burned on that.
- The press tool and fittings are becoming a more common used practice. Manufacturers will hopefully start providing that option to have their stub-outs press ready.
- Day-to-day has definitely been effected. Way more time is spent searching for equipment and materials.
- I think supply chain questions and efficiency ratings will dominate the questions at AHR.
- A huge industry topic is attracting more people into the trade workforce - whether it be on manufacturing/ wholesale side to the technical/installation side.



The quote I live by in the trades is:

**“Do it right the first time, no shortcuts.”**



 **@hvac\_refer\_guy**

**Mike Mayberry**



**What opportunities are ahead for HVACR in the coming year?**

For me, its continue on as normal. For a newer tech, its endless opportunities for a hard worker.

## In a Nutshell

- The company I work for is buried in work. We haven’t slowed down at all. Business in general is fantastic.
- A new trend in customer requests is updates and ETA’s. Customers are looking for better communication.
- Getting equipment is the most pressing issue in the industry right now. Getting parts and equipment is really difficult.
- Supply is a huge issue. Customers are looking to have systems fixed or replaced and parts and equipment are in short supply.
- I’d like to see better tech support from manufacturers.





 **@toolpros**  
**@miraclemechanical**

**Brent Ridley**, Licensed HVAC & Plumbing Contractor, Tool Pros (Miracle Mechanical, Plumbing School)  
*Almost 20 years in the industry*

## In a Nutshell

- Business has been steady. We have even seen a 50% increase in service/installation volume and because of this we have been able to bring on new crew members.
- We've seen an uptick in Indoor Air Quality interest and IAQ equipment requests from our customers
- As a HVAC contractor, the one thing I would like to see most of all are service valves without bell ends to allow for the use of press fittings.
- An important discussion for the show floor is educating customers on the new efficiency standards and refrigerant changes. I plan on speaking with manufacturers in regards to how they suggest we best communicate these topics to our customers.



 **@wil-rao-735676b**

**Wil Rao**, Intellectual Property Attorney at McAndrews, Held & Malloy  
*25 years in the industry*

“Innovation in the HVACR industry is critical, especially given many factors that have a direct connection such as COVID-19, energy efficiency, and climate change. We are seeing significant increases in patenting in heating, cooling, computational control of HVAC devices, remote control, energy management, and advanced ventilation control, among others, and it is evident based on these trends, we anticipate the industry growth to continue.”

“Customers being more interested in shopping around for repairs with various service providers seem to be more prevalent than in past years.”



**How has your day-to-day been affected by supply?**

We've had to substitute equipment based on what is available. Due to lack of supplies in some situations we are forced to install inferior equipment.



**What are the most pressing issues facing HVACR right now as an industry?**

Lack of equipment availability and significant pricing increases. In our area we've seen at least a 30% increase in equipment cost across the board.

**↑30%**  
increase in equipment cost



**What opportunities are ahead for HVACR in the coming year?**

Efficiency increases and refrigerant regulations will drive new equipment sales.

## In a Nutshell

- **Big Impact Innovations:** It's hard to predict the next big innovation, but based on patenting trends we are seeing, it looks like innovations in smart device control and energy management will drive the most increases in the HVAC arena.
- **Current Business Status:** It's a really exciting time to be in this field with all of the potential growth and development taking place. At our law firm, we are seeing significant growth in all areas of IP from securing trademarks, designs, trade secrets and patents, to litigating and enforcing many of these same rights in district court, the Patent Trial and Appeal Board, and at the United States International Trade Commission.
- **HVACR's Pressing Issues:** The HVACR industry follows what is happening in the world. There are incredible changes in sustainability, consumer comfort, infrastructure development, climate change, disease spread, and air movement innovation. These are all issues that are directly impacting the HVACR industry and are a catalyst to the growth and development that we anticipate seeing.

 @wil-rao-735676b

### Are there any new trends in regard to customer requests or purchases?

At McAndrews, Held & Malloy, our area of work is IP law and we offer a unique perspective in terms of what we are seeing across all industries. Now more than ever before, clients are looking to protect the look of their innovations. In the past, there wasn't much variety or excitement in the appearance of an A/C grate or control panel interface. However, beyond the patentable aspects of HVAC technologies, these days, designing something to look attractive is also critical to the business value in IP, to making the sale, and developing a memorable user experience. Plus, protecting the look of your unique product design is key to thwarting copyists and competitive advantage. As an IP attorney, it's my role to help companies develop an IP strategy to protect their ongoing innovations from trademarks, designs, trade secrets to patents, and something I'll be discussing in my education session at this year's AHR Expo.



### What are the most important discussions about HVACR you are having with the community currently?

With innovation comes the need to protect it, and that is the conversation I'm currently having with the community. I'm hoping to educate companies on the best, most efficient and effective ways that they can continue to grow, develop, and manufacture solutions to the current pressing HVAC opportunities previously mentioned, while allowing them to deploy their IP in a way that they can monetize and protect these valuable assets.



### What, if any, major shifts/changes have you noticed in the field?

Innovation is ongoing in the HVACR field and is more prominent than ever. There has been a shift to focusing on the design of products, ensuring they have an attractive consumer-friendly appearance. Energy efficient equipment is top-of-mind for many manufacturers. Smart technology in HVAC is continuing to evolve, integrate with other devices and make its way into the industry. Climate change is another area that has a direct impact on the field and is spurring innovation.



### What opportunities are ahead for HVACR in the coming year?

Patenting in heating, cooling, computational control of HVAC devices, smart remote control and energy management, and advanced ventilation control, among others, will continue to drive innovation in the industry in 2023. With all of the rapid changes taking place and evolution happening in this field, it is truly exciting to be a preeminent IP-focused law firm that provides strategic guidance, insight, and counsel on how companies can protect their innovations. At this year's AHR EXPO, I'll be helping attendees learn the ins and outs of using copyrights, trade dress and design patent rights to protect their design IP.