



# 2026

## Trend Report

**AHR** VEGAS FEB 2-4  
2026





# 2026 Trend Report

HVACR is a uniquely dynamic industry, uniting professionals from cross-disciplinary sectors. While our day-to-day roles may differ, we share common goals that drive progress with the objective to advance HVACR. The Industry Trend Report reflects this diversity, offering insights that bridge perspectives and spark meaningful conversations regarding the state of the industry ahead of Vegas.

Insightful contributions from our endorsing associations alongside perspectives from the various voices that make up the industry make for a unique compilation that captures the breadth of roles within HVACR and highlights key topics shaping today's discussions. We are grateful to all who participated—your perspectives are essential to understanding both the challenges and opportunities facing our industry.

As we prepare to meet in person, we recognize that aligning our varied approaches is critical to continued growth and shared success—a commitment that grows more important each year.

Find more information about the show and the industry at [ahrexpo.com](https://ahrexpo.com).



# Table of Contents

**Summary Takeaways & Common Industry Themes** →

## **Industry Associations**

AHRI →

ASHRAE →

AABC/ACG →

ASHB →

BACnet →

ESCO Group →

HARDI →

IAPMO →

PHCC →

RSES →

**From the Floor** →

**From the Field** →

**From the Pavilion** →



# Summary Takeaways & Common Industry Themes

## Regulation updates

- Decarbonization
- Electrification
- New standards with quicker onboarding
- Commissioning
- Energy management

## The built environment is evolving

- AI and controls
- Energy efficiency, sustainability and smart technology
- Automation
- IoT and data analytics
- Cybersecurity and BA systems

## Supply chain

- Refrigerant transition
- Equipment updates
- Changing incentives and tax credits

## Workforce and training

- Training the industry on flow of changes
- Streamlined communication throughout the channel
- Continued need for a strong and skilled workforce
- Promoting a lifelong career path in the industry

## Product adoption

- Heat pumps
- Hybrid solutions
- BMS systems
- ERV systems
- Dual-fuel options

## Meeting opportunities and challenges

- Balancing growth opportunities with demand
- Educating first the workforce, and secondly the end user
- Information onboarding
- Understanding information and regulation, compliance and market changes



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

[ahrinet.org](http://ahrinet.org) • Booth #C2302

AHRI serves its membership of 400-plus HVACR and water heating equipment manufacturers through operations around the world. AHRI members manufacture quality, efficient, and innovative HVACR equipment and components which account for more than 90 percent of the residential and commercial equipment manufactured and sold in North America.



**STEVE YUREK**  
President & CEO

## The Current State of HVACR

“The HVACR and water heating industry has the solutions and experience to help countries and regions to achieve their sustainability goals. **This year’s watchword is affordability, as policy makers around the world strive to ensure progress toward their energy and environmental goals** while ensuring continued consumer access to economical, efficient, reliable equipment.”

## Trending Topics

### NEXT-GENERATION REFRIGERANTS



**Completing the global transition toward next-generation refrigerants** remains high on our industry’s priority list. Our continued efforts to expand our global reach – we recently opened our 6th global office, in Singapore – will help policymakers there and in many other parts of the world use our standards and certification programs as paths to achieve sustainability goals. Other pressing issues include continued state efforts to regulate PFAS and plastics and packaging, and expand extended producer responsibility efforts.

### TAX CREDITS



As the tax credits and rebates for highly efficient equipment wind down in the United States as a result of the recent tax bill, as tariff activities increase, **manufacturers will be seeking additional ways to continue to provide essential affordable, reliable, efficient products to their customers.**

## Major Shifts



Our industry is **navigating a changed political landscape that presents both challenges and opportunities.** Completion of the refrigerant transition is a challenge we are confident we can meet, while reform of the Energy Policy and Conservation Act (EPCA) has its best chance in a long while, with a relatively sympathetic Congress and White House.

## Pressing Issues



**Keeping essential heating, cooling, water heating, and commercial refrigeration equipment affordable** in light of eliminated tax credits and increased tariffs is probably the most pressing issue facing our manufacturers.

# AHRI continued...

## Opportunities Ahead



We have a reasonable chance of achieving some reforms of the **Energy Policy and Conservation Act**, which turns 50 this year, having not been reformed since 2007.

## Challenges to Consider



Certainly the **global tariff situation** keeps our industry busy and is a continuing - and complicated - challenge.



## Looking Ahead to Vegas

I always like to travel the show floor, meeting our member company officials and **seeing the latest products and equipment.**



# ASHRAE

[ashrae.org](http://ashrae.org) • Booth #C2102

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 53,000 members globally including 5,500 student members in over 400 branches.



**BILL MCQUADE**  
2025-2026 President

## The Current State of HVACR

“ The HVAC&R industry is experiencing a period of rapid transformation. The focus is no longer solely on efficiency or cost savings, it is equally about creating indoor spaces that actively support health, comfort, and productivity. **The technologies and solutions driving our sector forward are reshaping expectations for how buildings should perform** for both people and the planet.”

### INDUSTRY CHANGES



In the short term, the **HVACR industry is adapting to rising expectations for energy efficiency, carbon reduction and improved resilience of building systems**. This includes addressing refrigerant transitions, electrification and smarter controls. In the long term, the industry is **moving toward integrated building performance**, where heating, cooling, water and power systems work seamlessly together. This change requires collaboration across disciplines and reinforces the role of HVAC&R professionals as central to the future of building design and operation.

## Trending Topics

### NEW TECHNOLOGIES



Discussions within the HVAC&R community are being guided by strong interest in **technologies that enhance occupant health, while lowering energy consumption**. Grid-interactive buildings and load flexibility are also emerging as priorities, reflecting the growing link between HVACR systems and the broader energy infrastructure. At the same time, the industry is paying close attention to **resilience strategies—designing systems that can withstand extreme weather events and ensure continuity of service in critical facilities**. The use of AI to optimize climate management is gaining traction, as are systems that enable real-time monitoring of indoor conditions. Heat pumps, refrigerant transitions and scalable thermal energy storage are also top of mind for many professionals.

### EFFICIENCY



Emerging discussions are centering on **energy storage, building-to-grid integration, and hybrid systems that combine renewable energy with efficient mechanical solutions**. Water efficiency and reuse in HVACR applications are also gaining traction, particularly in regions facing resource constraints. Professionals are also increasingly exploring circular economy approaches, from recycling refrigerants to designing equipment for easier maintenance and longer life cycles.

# ASHRAE continued...

## Major Shifts



There has been a noticeable shift toward **holistic building design with the elevation of IEQ to the same level of importance as efficiency and sustainability**. While energy performance has been a cornerstone of the industry for decades, the conversation now emphasizes the **important role of indoor environments in health, productivity and safety, as well as achieving community-scale decarbonization**. This shift has reinforced the importance of updated standards, interdisciplinary collaboration, and continued education for professionals across the supply chain.

## Pressing Issues



Across the industry, professionals are working to address **rising expectations for energy-efficient and low-carbon systems while also improving the quality of indoor environments**. Beyond these priorities, the sector is grappling with the **challenges of global supply chain disruptions and advanced data analytics into system design and operation**. Workforce development remains a critical concern, as emerging technologies require new skill sets and training pathways to ensure that the industry can meet growing demand. In ASHRAE's sector, the most pressing issues include **accelerating decarbonization efforts, ensuring that systems are designed with both sustainability and occupant well-being in mind, and preparing the workforce to adapt** to rapidly advancing building technologies and regulatory requirements.

## Opportunities Ahead



The coming year presents tremendous opportunities to expand the adoption of IEQ monitoring and control technologies, further develop building decarbonization strategies, and strengthen the industry's role in educating building owners, policymakers and the public about the value of healthy, sustainable indoor environments. **These opportunities highlight how HVAC&R professionals can lead the next chapter of building innovation.**

## Challenges to Consider



Looking ahead, the industry must overcome challenges related to the cost and adoption of health-centered technologies, the alignment of building codes and standards with emerging IEQ expectations, and the ongoing need to equip the workforce with the skills to manage increasingly integrated and intelligent systems. **These challenges underscore the importance of collaboration, investment and continued education.**



## Big Impact Innovations

The innovations most likely to impact the future of HVAC&R include intelligent indoor air quality systems that adapt in real time to occupancy and pollutant levels, AI-driven optimization for predictive system performance, heat recovery from high-intensity facilities like data centers, and integrated solutions that manage both air and water quality. These **advances promise to expand the role of HVACR professionals in supporting healthier, more sustainable communities.**

## Membership Discussions



Members of ASHRAE and the broader HVACR community are actively discussing how to implement IEQ-enhancing technologies, integrate AI into system performance, and align their work with decarbonization and sustainability goals. On the show floor, **these discussions will translate into strong interest in product demonstrations, partnerships with technology providers, and exploration of solutions that meet the dual expectations of performance and health.**

## Looking Ahead to Vegas



ASHRAE looks forward to exploring how exhibitors are integrating health, efficiency, and sustainability into their latest products and solutions. **The Expo will provide valuable opportunities to see live demonstrations of AI-enabled systems, cutting-edge IEQ tools, and decarbonization strategies that can be applied across the built environment.**

# ASHRAE continued...

## HVACR in the Spotlight



As HVACR continues to receive mainstream attention, **professionals must focus on staying informed through trusted resources, continuing education, and updated standards.** By translating technical progress into clear, relatable benefits—such as healthier workplaces, safer schools, and more comfortable homes, professionals can build stronger trust with customers and highlight the essential role HVACR plays in daily life.

### Facts & Figures



**53,798**

Total society members

↑ **225** from previous membership year



**401**

Distinguished lecturer visits (*virtual & in-person*)

↑ **80** from previous membership year



**201** & **577**

Total chapters

Student branches

### ASHRAE CONFERENCES

**2** Society    **4** Topical    **16** CRCs

#### 2025 Annual Conference

Phoenix, AZ | June 26-30

#### 2025 Winter Conference

Orlando, FL | February 8-12

#### Women's Leadership Symposium

Chicago, IL | September 26-27

#### 2024 Conference on Decarbonization Buildings

New York, NY | October 21-23

#### 6th International Conference on Efficient Building Design

Beirut, Lebanon | October 3-4

#### Third International Conference on Energy and Indoor Environment for Hot Climates

Doha, Qatar | April 23-24



### PROJECTS

**42** & **12**

Active

Complete



**69**

Standards & guidelines in development



**3,700**

Total technical inquiries



# Associated Air Balance Council (AABC)/AABC Commissioning Group (ACG)

[commissioning.org](https://commissioning.org) • Booth #C6229

The AABC Commissioning Group (ACG) is a non-profit association dedicated to advancing the commissioning industry through independent third-party professionals. Since 2004, ACG has been committed to promoting a comprehensive understanding of the commissioning process by educating, training, and certifying qualified experts as Certified Commissioning Authorities (CxAs) and Certified Commissioning Technicians (CxTs).

## The Current State of HVACR

“ The HVACR industry is advancing rapidly, with more complex specifications and robust control options than ever before. From meeting the precise temperature and humidity needs of cleanrooms and pharmaceuticals to maintaining hospital pressurization, **our work now demands both a solid foundation in thermodynamics and the ability to apply it to new technologies and designs.** Success depends on skilled collaboration across design, installation, testing, and maintenance to deliver efficient, high-performing systems.”

### INDUSTRY CHANGES



The industry has evolved to **prioritize advanced controls, ventilation on demand, and static reset schedules**, which require accurate airflow verification and a deep understanding of how air is conditioned and filtered. The shift toward efficiency and precision has made collaboration and communication across all project phases essential for creating better functioning spaces and satisfied building owners.

### Trending Topics

- Precision control for cleanrooms and pharmaceuticals
- Hospital pressurization and cleanliness standards
- Ventilation on demand and static reset
- Advanced controls and equipment integration
- Decarbonization
- IAQ
- Role of independent test and balance firms
  - Refrigerant phase-out (R-410A to R-454B and R-32)
  - Decarbonization and electrification strategies
  - Shortage of skilled labor in mechanical, controls, and TAB contracting
  - Connected commissioning during construction
  - Fault detection and diagnostics for ongoing performance
  - Artificial intelligence applications in building operations

# AABC/ACG continued...

## Major Shifts



We've seen a growing **emphasis on meeting increasingly rigorous environmental and operational specifications**, such as the precise temperature and humidity control needed in cleanrooms and pharmaceutical manufacturing, and the cleanliness and pressurization of hospital critical spaces. There's also a shift toward integrating more advanced controls to optimize system efficiency while ensuring compliance with these exacting requirements.

We've been focused on the **industry's shift toward higher energy efficiency, decarbonization, and electrification, along with the refrigerant phase-out** moving from R-410A to lower-GWP alternatives like R-454B and R-32. We've also been closely monitoring the rise of connected commissioning and other smart building technologies that improve efficiency and lifecycle performance.

## Pressing Issues



Across the industry, one of the most pressing issues is **ensuring that complex systems are not only designed to spec but also tested, verified, and maintained** to operate as intended. In our sector, the challenge lies in delivering physical verification of invisible factors like airflow and pressurization, which requires highly skilled teams with strong foundations in thermodynamics and evolving control strategies.

Industry-wide, **supply chain disruptions and material shortages continue to extend lead times for equipment**. At the same time, the **shortage of skilled labor** in mechanical, controls, and test and balance contracting is making it more challenging to meet demand. In our sector, these challenges underscore the importance of workforce development and targeted training.



## Big Impact Innovations

Advancements in **control sequencing, particularly static reset schedules and ventilation on demand** have the potential to transform efficiency and occupant comfort. These innovations, when paired with precise airflow measurement and filtration tracking, can help reduce energy waste while maintaining critical environmental conditions.

## Membership Discussions



Members are focused on **how to accurately verify system performance in real-world conditions**, especially in facilities with strict environmental controls. They're also discussing the **integration of smarter controls** to meet these needs without over complicating operations.

## Looking Ahead to Vegas



We are looking forward to **exploring innovations in testing equipment, controls integration, and IAQ solutions** that can help meet stricter performance standards while improving operational efficiency.



## Opportunities Ahead

With more robust and accessible control options available, there is a **tremendous opportunity to achieve unprecedented levels of system efficiency**. Demand-based ventilation and optimized control sequencing can lead to energy savings, better IAQ, and more comfortable, functional spaces. The ability to demonstrate system performance through precise testing will also position qualified professionals as indispensable partners.

The **rapid adoption of smart building tools** offers a major opportunity to deliver projects more efficiently and maintain building performance more effectively after occupancy. Organizations that invest in training and adopt these technologies early will be positioned to lead in the next phase of HVACR growth.

# AABC/ACG continued...

## Challenges to Consider



A major challenge is **ensuring that design, installation, testing, verification, and maintenance teams work from the start**. The increasing complexity of control systems and the need for dynamic testing under varying conditions require deep technical expertise and close collaboration between all project stakeholders.

## HVACR in the Spotlight



As HVACR continues to receive mainstream attention, **professionals must focus on staying informed through trusted resources, continuing education, and updated standards**. By translating technical progress into clear, relatable benefits—such as healthier workplaces, safer schools, and more comfortable homes, professionals can build stronger trust with customers and highlight the essential role HVACR plays in daily life.



# Association for Smarter Homes & Buildings (ASHB)

[ashb.com](http://ashb.com) • Booth #SU1925

The Association for Smarter Homes & Buildings (ASHB) (formerly the Continental Automated Buildings Association - CABA) supports the intelligent building and connected home technologies market — an industry we've helped grow since 1988. Discover our research and networking opportunities and join with nearly 300 member companies with activities in the smart buildings and homes industry.



**GREG WALKER**  
CEO

## The Current State of HVACR

“ The HVACR industry is at a pivotal point, **caught between urgent climate commitments and a wave of technological innovation**. From AI and automation to electrification and IAQ, the pressure is on to deliver smarter, cleaner, and more resilient systems.”

### Trending Topics



- Open data protocols and interoperability across systems
- Indoor air quality (IAQ) and healthy building certifications
- The role of HVAC in decarbonization strategies
- Cybersecurity concerns as systems become more connected
- AI-powered predictive maintenance

### Major Shifts



There's been a **noticeable acceleration in how the industry approaches digital transformation and decarbonization**. More companies are moving beyond pilot projects and scaling smart building strategies across entire portfolios. AI integration has also matured, shifting from hype to practical applications like predictive maintenance, energy optimization, and system diagnostics. Additionally, customer demand for open, interoperable systems has grown significantly, putting pressure on vendors to prioritize flexibility and integration. Finally, the workforce conversation has expanded beyond recruitment to include upskilling existing talent in data analytics, cybersecurity, and systems thinking.

### Opportunities Ahead



Opportunities lie in enabling smarter retrofits, particularly in existing commercial buildings. **Leveraging cloud-based platforms, edge devices, and integrated analytics can help legacy systems catch up without a full rip-and-replace**. Additionally, federal and state-level incentive programs continue to fuel investment in energy efficiency and indoor air quality improvements.

### Pressing Issues



Industry-wide, there's **ongoing pressure to meet decarbonization goals while keeping costs in check**. The talent shortage, particularly in controls and systems integration, continues to slow down project execution. In our sector, smart building automation, there's also the challenge of unifying disparate systems and achieving true interoperability at scale.

# ASHB continued...

## Challenges to Consider



Cybersecurity is becoming a major concern as more HVAC systems connect to the cloud. **We're closely watching how manufacturers are responding with more secure-by-design products.** Supply chain resiliency and equipment standardization are also ongoing challenges, especially as the industry pushes toward electrification and low-GWP.

## Looking Ahead to Vegas



We're looking forward to reconnecting with industry peers, exploring new product innovations, and attending sessions focused on data interoperability and AI in HVAC. **AHR Expo continues to be one of the best places to see how quickly the market is evolving and where collaboration is happening across sectors.**

## HVACR in the Spotlight



With HVACR increasingly in the media spotlight, professionals can stand out by becoming trusted sources of information. **Staying informed through industry publications, trade shows like AHR Expo, manufacturer updates, and online communities helps them cut through the noise and offer practical, accurate guidance to customers.** Sharing clear, relevant insights not only builds trust, it strengthens the reputation of the industry as it evolves.



## Big Impact Innovations

AI-driven fault detection and diagnostics, open-source building operating systems, and digital twins hold significant promise. They offer the **potential to move from reactive to proactive operations**, unlocking efficiency gains, reducing downtime, and enabling better capital planning.

## Membership Discussions



Many discussions center on how to implement scalable, secure smart building strategies. **Members are looking for turnkey solutions and trusted integration partners.** On the show floor, we'll be looking for technologies and partners that can support cloud-first deployments, better analytics integration, and streamlined commissioning tools.

# BACnet International

[bacnetinternational.org](http://bacnetinternational.org) • Booth #C540

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. BACnet enables interoperability by defining communications messages, formats and rules for exchanging data, commands, and status information. BACnet provides the data communications infrastructure for intelligent buildings and is implemented in hundreds of thousands of buildings around the world.



**DAVID NARDONE**  
Membership &  
Education Manager

## The Current State of HVACR

“ The HVACR and building automation industry must continue providing effective, efficient, secure, open, and expandable solutions for all applications. **Celebrating 30 years and over 30 protocol revisions, BACnet continues to be the open protocol solution.** This year’s AHR Expo includes over 100 manufacturers representing over 1,000 BTL Listed products that have successfully completed independent conformance testing.”

### INDUSTRY CHANGES



**Interconnected and secure systems are becoming required** through specifications or regulations. Choosing an open, expanding and testable protocol, such as the BACnet Standard, will help ensure initial and future success.

### Trending Topics



The BACnet protocol and its global adoption continues to accelerate. BACnet Secure Connect (BACnet/SC) and lighting color objects have broadened the reach of the open protocol. There is an **increasingly strong interest in updating common or ‘simple’ devices to embrace BACnet, or a more complex communication layer.** These trends will result in a more efficient, reliable future that can be maintained and easily expanded upon.

ESCO is your gateway to the dynamic world of HVACR and building science, where innovation and knowledge shape the industry's future. We are committed to setting industry standards, providing validation tools, and delivering tailored training resources to help professionals thrive. Join us in advancing the industry and building a brighter, more sustainable future. Whether you are a student, technician, contractor, manufacturer, wholesaler, or instructor, the ESCO Institute offers resources to help advance your career.



**CLIFTON BECK**  
Manager of  
Digital Media

## The Current State of HVACR

“ The HVACR industry is undergoing a dramatic transformation. Fueled by technological innovation, regulatory shifts, and surging demand for energy-efficient solutions, **this evolution is pushing HVACR professionals to rethink their role in the marketplace or risk being left behind.**

One of the most striking indicators of this change is the shift in **consumer preference from gas furnaces to heat pumps.** According to AHRI, heat pump shipments have outpaced gas furnace shipments by 32%. That's not a minor trend; it's a clear market signal, making it no longer optional to understand heat pumps. It's essential!

The key element holding back its growth is the lack of qualified HVACR professionals who understand higher-performance heat pumps. Today's heat pumps are complex and sophisticated. Incorrect installation, and/or poor service leads to inefficiency, reduced lifespan, and disenfranchised consumers. That's why **training and certification are no longer optional, they're mission critical!**”

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### INDUSTRY CHANGES



Gone are the days when heat pumps were seen as a novelty or a climate-limited option. Modern cold-climate models with inverter-driven compressors and vapor injection technology can operate effectively in minus zero temperatures without relying on inefficient backup resistance heat. **The old myth that “heat pumps don't work when it's cold outside” has been thoroughly debunked.**

### Major Shifts



During the 2025 AHR Expo, the refrigerant transition was a key discussion amongst stakeholders. Today, the transition is underway, and **professionals have concerns about the availability of products and refrigerants to fill their customer's needs.**

### Opportunities Ahead



There is an unprecedented opportunity for HVACR professionals. However, **those who embrace new technologies are always at the forefront of innovation** and increasing their earning potential.

# ESCO Group continued...

## Trending Topics

The HVACR industry has seen continuous evolution, but the pace and scope of change in recent years have been unprecedented. Driven by government regulations and rapid technological innovation, **professionals across the sector are navigating a wave of transformation that's reshaping how systems are designed, installed, and serviced.**

Currently, the hottest and most discussed topics in our industry include:

- **The HFC Phasedown and Transition to Low-GWP Refrigerants:** The industry is rapidly transitioning away from refrigerants like R-410A, with a strong focus on safely adopting alternatives such as R-32 and R-454B in compliance with the AIM Act.
- **Inverter-Driven and Variable-Speed Technologies:** These systems are becoming the new standard in energy-efficient, comfort-optimized solutions. They also require a higher level of understanding and training due to their complexity.
- **Modern Diagnostic Capabilities:** Advancements in digital tools, smart sensors, and connectivity are transforming how technicians troubleshoot and maintain systems, emphasizing the need for upskilling in diagnostics and performance monitoring.
- **Cold Climate Heat Pumps:** As electrification efforts expand, cold-climate heat pump technology is gaining traction as a sustainable, year-round heating and cooling solution, even in northern regions where traditional heat pumps struggle.

## Pressing Issues



According to the Bureau of Labor Statistics, an estimated 40% of skilled trades professionals are expected to retire within the next decade. Compounding this challenge is the declining birth rate in the United States, with an average of just 1.6 children per couple, well below the replacement level. As a result, the **skilled labor shortage our industry has long grappled with is projected to intensify.** However, as many other sectors increasingly adopt automation and artificial intelligence, the HVACR and skilled trades industries have a unique opportunity to rebrand themselves as career paths offering essential, hands-on work that cannot be automated or outsourced.

## Big Impact Innovations



There are years when no change happens, and weeks where decades of innovation are released. The COVID-19 pandemic forced change on all of us. As a result, **the HVACR industry today is seeing a growing number of education tools at its disposal.** These include Artificial Intelligence (AI), Virtual Reality (VR), webcast with firsthand information direct from industry stakeholders, etc. While these do not replace formal training, they will greatly enhance the process, and give instructors more time for individual instruction.

## Membership Discussions



**Training today is more essential than ever!**

There is a bit of irony that one needs 5 years of training to install natural gas lines, and 4 years of training to install electrical, but we allow those with no formal training to install the final connections to and start up a high-tech, electronic, piece of equipment.

## Challenges to Consider



**Training the existing workforce is one of the most significant challenges employers face today.** The costs associated with pulling team members off the job for training can be substantial. An employee in the classroom cannot simultaneously be in a customer's home generating revenue to cover their wages. While this is not a new issue, it has become more difficult in today's environment—where workforce numbers are shrinking just as the industry undergoes a major technological transition.

Another challenge is as the **demands for increased knowledge continue to grow,** the length of technical training programs continue to see a reduction in hours. There are some who believe you can take a green person, with no knowledge and have them in a truck in just a few weeks.

# Heating Air-conditioning Refrigeration Distributors International (HARDI)

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

HARDI (Heating Air-conditioning Refrigeration Distributors International) is a trade association with the mission of making wholesale distributors the channel of choice for HVACR manufacturers and contractors. We provide our members with the tools and resources needed to advance your businesses. We have a team of market researchers, data analyzers, trainers, lobbyists, marketers and account managers all working to support you. When you become a HARDI member, you get more than just a membership, you get access to an entire community.



**TALBOT GEE**  
CEO

## The Current State of HVACR

“2026 will test the industry’s ability to adapt as much as it will reward those who’ve learned from the past two years. **The refrigerant shortages of 2025 exposed the cost of weak forecasting and breakdowns in communication across the supply chain, but they also sharpened the industry’s awareness of what coordinated planning requires.** The way distributors manage pricing impacts from tariffs will reveal — and strengthen — their value as partners to their customers. It will also be essential that we continue stay the course set by the AIM Act, even as uncertainty surrounding the Technology Transition Rule creates some unease. HARDI remains focused on ensuring distributors have the insight and tools to meet these challenges head-on.”

## INDUSTRY CHANGES



Recent trends from HARDI’s Unitary Market Program indicate that the transition to A2L products is nearing completion. As of July 2025, A2L refrigerants accounted for 86% of unitary sell-through volume, with R-410A representing just 14%. This marks a **significant milestone for the industry, reflecting both the adaptability of distributors and manufacturers and the growing alignment with the goals of the AIM Act.**

## Major Shifts



Refrigerant shortage, forecasting, tariffs. Additionally, state level advocacy has become increasingly important and has been something HARDI has invested in heavily in the last couple of years. With issues surrounding PFAS, considerations around ultra-low GWP refrigerant, and serial number tracking, it’s **important that businesses stay informed and empowered about state regulations that could impact their operations.**



## Pressing Issues

Members are faced with finding new ways to protect profitability in markets that are increasingly tight.

# HARDI continued...



## Challenges to Consider

One of the most immediate challenges we're watching is the **sharp decline in air conditioning demand during the latter half of 2025**. Weak sell-through has led to elevated inventory levels, putting added pressure on margins. As a result, maintaining profitability in the near term will depend heavily on disciplined cost management and careful inventory control. The coming year will test the industry's ability to balance operational efficiency with readiness for eventual demand recovery.

**Advocacy at the state level has evolved into the primary battleground of HVACR policymaking.** So much so that it has been a key area of investment for HARDI over the last couple of years. This investment is necessary to properly protect the industry from issues surrounding PFAS (per- and polyfluoroalkyl substances), ultra-low GWP refrigerant phase-downs, nitrous oxide (NOx) emission limits, and serial number tracking. It's crucial that businesses at each level of the supply chain stay informed, represented, and participate in state rule-makings that will affect the future of their business operations.

## Opportunities Ahead



One of the biggest opportunities ahead lies in financing. **Distributors who embrace and promote financing programs will be better positioned to support both their contractor customers and end users.** As HVAC system affordability continues to decline, consumers facing replacement decisions will increasingly seek partners who can educate them on their options and make the process more accessible. Those who proactively communicate and offer financing solutions will stand out as trusted allies in a tightening market.

Another big opportunity lies in continued education and awareness of regulatory developments at both the state and federal levels. **Staying informed empowers professionals to better guide their customers and strengthen trust.** At HARDI, we regularly share updates on [hardinet.org](http://hardinet.org) and via our Government Affairs email alerts to help members stay current and engaged in these important conversations.

## Big Impact Innovations



AI continues to be one of the most transformative forces shaping the HVACR industry. Its ability to enhance forecasting, optimize energy efficiency, and strengthen supply chain visibility is already redefining how businesses operate. **As the industry moves further into the refrigerant transition, AI will play an even greater role — helping companies anticipate demand changes, manage compliance requirements, and adapt seamlessly to evolving standards.** The organizations that invest early and integrate these tools thoughtfully will be best positioned to lead in the years ahead.

## Membership Discussions



Across the HVACR industry, **tariffs and their influence on pricing strategies are top of mind as distributors assess how to manage cost pressures while continuing to deliver value to their customers.** There's growing momentum around the use of AI — not just for forecasting, but for improving overall operational efficiency. And while technology continues to advance, one of the most important conversations remains centered around workforce. Developing strategies that attract, educate, and retain a skilled and diverse talent base is essential to ensuring the industry's long-term strength and competitiveness.

## Looking Ahead to Vegas



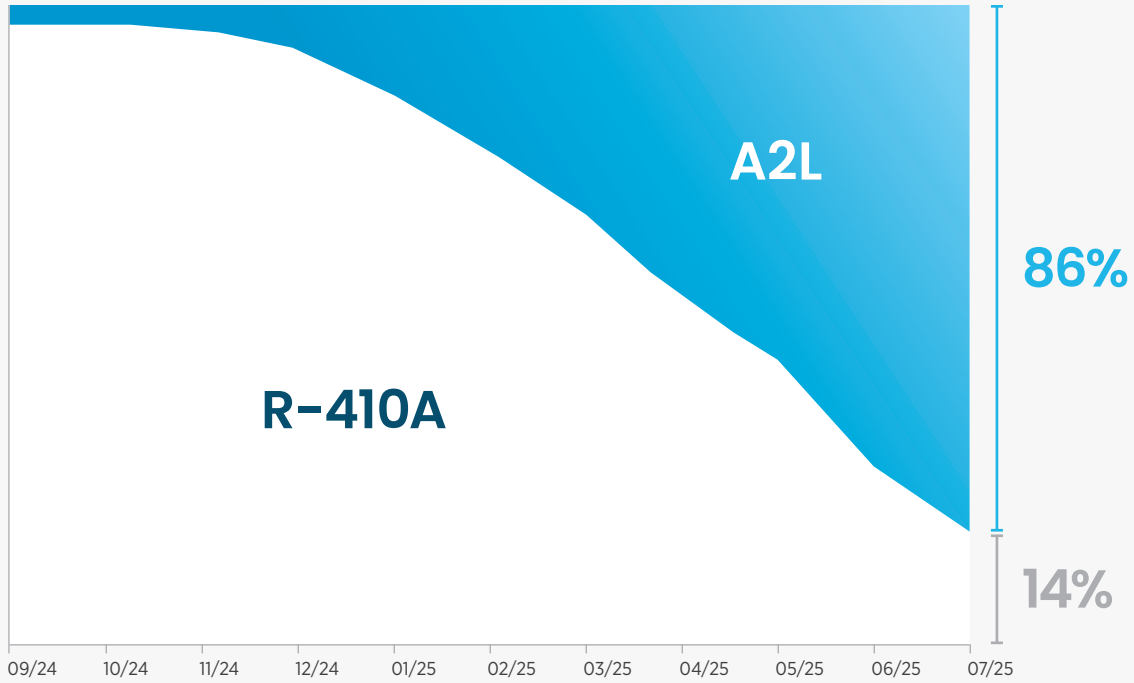
Our members will be well-served to seek out not only **new products and technologies, but also partners who can help them continue delivering reliable service, high-quality products, and cost-effective solutions** in what is shaping up to be a challenging year.

# HARDI continued...

## Facts & Figures

The sell-through market is now almost entirely A2L

HARDI Distributors: Unitary Volume by Refrigerant Type





# The International Association of Plumbing and Mechanical Officials (IAPMO)

[iapmo.com](http://iapmo.com) • Booth #SU773

IAPMO is a global team of experts engaging industry and government for a safer built environment. Our deep expertise in codes and standards is applied to our rigorous product testing, certification and inspection services, professional development offerings, industry research, policy and advocacy work.



**JOHN MULLEN**

Director of Technical Services and Research

## The Current State of HVACR

“ The heating and cooling industry is changing faster than it ever has. The scope is expanding, and new methods are being tested and verified every day. **Keep your ear to the ground for the innovative ways plumbers and fitters are reshaping the nation’s energy landscape.** As we head into 2026, AI-driven controls, advanced hydronic systems, and Thermal Energy Networks are moving from concept to core infrastructure. The momentum is incredible, but so is the responsibility. Meeting climate goals, improving efficiency, and training a new generation of skilled workers to keep pace. Water remains our most overlooked energy asset, and when used as a tool for thermal energy transfer, it creates systems that are cleaner, more resilient, and more cost-effective for communities everywhere.”

## INDUSTRY CHANGES



Modern methodologies like geothermal systems, Thermal Energy Networks, integrated AI controls, and advanced hydronic applications are no longer ‘special projects’ they’re becoming standard expectations. **That shift demands more than just technical know how; it requires a rethinking of how we train, mentor, and certify the next generation.**

Through organizations like the Radiant Professionals Alliance (RPA), **we’re creating pathways for tradespeople to get hands-on with these emerging systems while learning directly from industry veterans.** Through IAPMO the RPA’s collaborative approach is bringing together contractors, engineers, manufacturers, and educators to ensure that knowledge transfer happens at every level, from the classroom to the job site. The industry’s future will be defined by how well we scale this education. Every time a plumber or fitter masters a new approach to energy transfer, we’re not only advancing the trade we’re reshaping how communities across the nation use and share energy.

# IAPMO continued...

## Trending Topics

### TRENDING RADAR

The future of our industry is being written right now and it's a collaborative story. **Heating, cooling, and plumbing are converging into a single, interconnected hybrid**, where water and energy are managed with precision and shared across systems; even entire communities. The leaders in this movement are those willing to break down traditional trade boundaries, share knowledge, and think bigger than their own niche.

Organizations like **IAPMO and the Radiant Professionals Alliance (RPA)** are at the center of this transformation, building the codes, education, and partnerships that make cross-industry collaboration real. We're seeing geothermal, Thermal Energy Networks, AI-driven controls, and advanced hydronics move from pilot projects to core infrastructure and we're proving that when disciplines unite, innovation accelerates.

This movement is about **re-imagining how the built environment works as a whole**. By aligning contractors, engineers, utilities, and policymakers toward shared goals, we can deliver systems that are highly adaptable to the challenges of the decades ahead.

### DECARBONIZATION



**Decarbonization and grid integration are accelerating as we look for smarter ways to balance energy demand.**

Data centers, with their massive heat loads, are becoming prime candidates for water based hydronic cooling solutions, creating opportunities for Thermal Energy Networks and geothermal applications.

### HEALTH & IAQ



Health considerations and IAQ are moving to the forefront, especially as **advanced hybrid systems and AI-driven controls allow us to maintain both efficiency and well being of the occupants.**

Cybersecurity, once an afterthought in building systems, is now essential as connected controls and IoT devices multiply.

### COLLABORATION



By being the leader in facilitating cross industry collaboration we continue to tackle these challenges head on through codes, standards and training programs that keep pace with innovation. From workforce development to regulatory updates, from supply chain shifts to the next wave of renewable integration, **the future belongs to those who can bridge disciplines and adapt quickly.**

## Challenges to Consider

### COOLING REQUIREMENTS



One of the most immediate challenges we face is the **surge in data center construction to support AI, quantum computing, and other high compute technologies**. These facilities require enormous amounts of cooling, and without smart solutions, they risk overwhelming local grids and driving up energy costs.

**Thermal Energy Networks (TENS) offer a clear path forward.** By using water as the primary medium for heat transfer, we can capture and redistribute thermal energy with unmatched efficiency. This approach safeguards our ability as a nation to remain a leader in AI and quantum computing by ensuring we can power and cool these systems sustainably.

### PROPER EDUCATION



Right now, our focus is on **educating decision makers about why water based solutions work and how to implement them correctly**. It's a rare moment when energy infrastructure, national competitiveness, and environmental responsibility intersect and we need to make the most of it.

# IAPMO continued...

## Pressing Issues

### PROPER LEGISLATION



Right now, the most pressing issue is **navigating the rapidly evolving national energy landscape**. Legislation at both the federal and state level is creating unprecedented momentum for geothermal and other low-carbon solutions and that's exactly where our industry needs to be focused.

### DATA CENTER COOLING



The surge in data center construction to power AI and other high compute applications is putting massive new demands on the grid. **Cooling these facilities efficiently isn't optional; it's mission critical**. Water based cooling remains the most effective and elegant solution, especially when integrated into district systems that allow heat to be captured, moved, and repurposed.

### EFFICIENT TRAINING



In our sector, we must **seize this moment to train tradespeople to design, install, and maintain these systems to the highest standards**. With the spotlight on sustainable cooling, we have a rare opportunity to cement water based solutions as a go to strategy if we prepare the workforce to deliver them reliably and at scale.

## Opportunities Ahead

### EFFECTIVE TRAINING



The biggest opportunities for HVAC and plumbing in the coming year will be in how we educate, advocate, and collaborate. The technology is here with geothermal and Thermal Energy Networks to utilize AI driven controls. The real win will be getting more people trained to use it effectively. **That means expanding hands on education, creating clearer pathways into the trades, and equipping the next generation with skills that match the pace of change.**

### PROPER ADVOCACY



Advocacy will also be critical. As legislation and incentives continue to favor sustainable solutions, **we have a unique chance to make sure policy decisions align with real world installation and maintenance needs**. This is where organizations like IAPMO and the Radiant Professionals Alliance (RPA) play a leading role by uniting all to speak with one voice. Collaboration across industries is where breakthroughs will happen. When we combine the expertise of HVAC, plumbing, and utility sectors, we can deliver integrated systems that are smarter, cleaner, and more resilient. The coming year we should all focus on building the networks of people and partnerships that will make it work.

## Major Shifts



Since last year's AHR Expo, one of the biggest conversations within The Radiant Professionals Alliance (RPA) has been about **scaling the impact of the Building Efficiency System Tool™ (BEST)**. After winning last year's AHR Innovation Award, we've been hard at work on BEST Software 7.0 and it's a game changer.

The new release will introduce multi building modeling for Thermal Energy Networks, **allowing engineers, designers, and building owners the ability to evaluate interconnected systems across an entire campus, district, or community at no cost**. This upgrade takes BEST from a powerful single building decarbonization tool to a full scale district energy planning platform. By quantifying efficiency gains, cost savings, and carbon reductions at scale, BEST 7.0 empowers decision makers to invest confidently in geothermal, hydronic, and other low carbon technologies.



### Big Impact Innovations

The innovations with the biggest potential impact aren't always the flashiest, they're the ones that make complex solutions easy to model, understand, and implement. **Tools like the Building Efficiency System Tool™ (BEST) allow us to take real world case studies and turn them into clear, data driven scenarios that decision makers can't ignore.**

When you can show exactly how a Thermal Energy Network or geothermal installations perform in real communities, it's a no brainer. What it costs, what it saves, and how much carbon it avoids steers the conversation from theory to certainty. Letting the data tell the story makes the solution undeniable. This approach builds confidence across industries, accelerates adoption, and ensures that sustainable design becomes the default, not the exception.

# IAPMO continued...

## Membership Discussions



Right now, our members are talking about **how to turn the theory of 'water as energy' into large scale, working systems.** That means seeking out products and partners that can utilize heat rejection technology such as ground source heat pumps (GSHP's), water to water heat exchangers and newer innovations like waste energy transfer systems (WET).

These technologies are essential to creating the interconnected, low carbon infrastructure our industry is aiming for. **The beauty is, many of these partners will be right on the AHR Expo floor again this year.** This is the place where we can connect the dots by pairing proven equipment with emerging designs like Thermal Energy Networks to create integrated hybrid solutions.

When the right products, partnerships, and vision come together, water becomes more than a utility; it becomes the medium that harmonizes heating, cooling, and energy efficiency across the entire nation.

## Looking Ahead to Vegas



I'm especially **looking forward to hosting the Radiant Professionals Alliance's ongoing YouTube series "LIVE from AHR" a free education track.** We'll be highlighting many of the trends I've shared here, from new solutions, workforce development and cross industry collaboration. These sessions are a chance to dive deeper, answer real world questions, and connect attendees directly with the tools and partners that can make these ideas a reality.

But beyond the sessions, **what makes AHR one of the best shows of the year for me is the people.** Being surrounded by peers, partners, and innovators from every corner of the world, it's that exchange of ideas that keeps our industry moving forward.

## HVACR in the Spotlight



**Following credible industry sources like the "Radiant Comfort Report" and our quarterly RPA newsletter** help to keep you connected to the latest technical updates, policy shifts, and product innovations.

We also make it easy to keep your skills sharp through free and on demand learning. **The RPA's YouTube channel offers accessible education sessions you can watch anytime, while IAPMOlearn.org provides structured training programs** for deeper technical mastery and professional qualifications.

By staying plugged into these resources, **professionals can turn industry buzz into meaningful conversations with customers.** You can quickly learn what's new, why it matters and how our solutions can improve comfort, efficiency, and sustainability. Join the Radiant Professionals Alliance today to stay in the know and a vital part of our progress.



# Plumbing-Heating-Cooling Contractors – National Association (PHCC)

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

The premiere organization for the p-h-c professional, PHCC provides legislative advocacy, education and training to approximately 3,300 plumbing and HVACR open shop and union businesses and 65,000 technicians. Our members work in the residential, commercial, new construction, industrial and service and repair segments of the construction industry.



**CINDY SHERIDAN**  
CEO

## The Current State of HVACR

“Last year’s concerns for acceptance of new products brought forth by the refrigerant transition were proven to have been overstated. Prompt market acceptance of A2L products has created other supply side concerns for equipment and refrigerant availability, prompting more repair of existing systems than is typical for most contractors.”

### INDUSTRY CHANGES



With uncertainty around energy efficiency tax incentives set to expire at the end of 2025, **there is an opportunity to work with commercial and residential building owners to act now to make important HVAC upgrades** before the end of the year, which would also allow them to take advantage of tax benefits while they’re still available.

## Trending Topics

### REGULATORY UPDATES



**PHCC continues to support the AIM Act and believes EPA should ensure competent personnel are doing this work.** PHCC supports stronger enforcement of licensing and certification requirements to ensure safe and optimal performance of advanced heating and cooling systems.

### WORKFORCE DEVELOPMENT



PHCC was successful in ensuring Pell Grants are eligible for short-term vocational training as part of the One Big Beautiful Bill Act (OBBBA). **We continue to work with Congress to ensure the Workforce Innovation and Opportunities Act (WIOA) is reauthorized and receives funding at the highest possible levels**, and we intend to work with the Trump Administration to ensure the president’s executive order on apprenticeships is fully realized.

## Major Shifts



The **acquisition and consolidation of plumbing and HVAC contracting businesses** by private equity groups continues to be a notable trend.

# PHCC continued...

## Pressing Issues



As the industry continues to transition to the next generation of refrigerants, **it is important to ensure technicians have the training and resources necessary for successful installation of new products, and for customers to understand how the transition impacts product availability and performance.** Overall, PHCC cannot overstate how critical it is for the industry to stay the course as implementation of the AIM Act continues. We must understand that turning back or otherwise interfering with timelines will only add to economic burdens for both contractors and customers, while putting the U.S. at a global disadvantage in the HVAC market.



## Challenges to Consider

PHCC believes it is **time for some thoughtful discussions on the subject of EPCA reform.** Given the significant advancements in covered appliances' base efficiencies, establishing new review timelines and defining energy savings metrics that determine "significant energy savings" would reduce regulatory burden and allow more stability in the market.

## HVACR in the Spotlight



We are lucky to have great industry-specific media outlets in the trades, that contractors and industry professionals can consistently turn to for the latest and greatest information. In addition to those great media partners, **we hope that not only our members, but ALL in the industry see PHCC as a trustworthy source, especially when it comes to industry news and education.** In addition to publishing monthly newsletters and quarterly magazines for our members, we also consistently post articles to our website ([phccweb.org/news](http://phccweb.org/news)) and send press releases to the media, to make sure we are always getting the word out there about all things our organization is involved in within the industry.

## Member Discussions



Even with a new Congress and presidential administration that is much more favorable to consumer energy choice, **PHCC remains vigilant (especially at the state and local levels) in ensuring that residential and commercial building owners have unlimited options when it comes to the utilities and appliances necessary for building performance, regardless of energy source.** We are working with Congress and the administration to identify ways to intervene in order to protect consumers from heavy-handed policies that prevent or highly restrict the use of natural gas and delivered fuels when those energy solutions are often the most appropriate. As Congress prepares to debate the possible reform of the Energy Policy and Conservation Act of 1974 (EPCA), we see an opportunity to address this matter and provide clarity when it comes to federal preemption.

# Refrigeration Service Engineers Society (RSES)

[rses.org](https://www.rses.org) • Booth #C6228

Since 1933, Refrigeration Service Engineers Society (RSES) has been a leader in training and education for professional HVACR technicians and contractors. RSES is a membership organization with members in chapters in the U.S. and Canada, with additional technicians routinely using its training material in 50 countries across six continents.



**LORI SHAVO**  
Senior Director  
of Operations

## The Current State of HVACR

“ The HVACR industry is in a period of unprecedented transition. Policy shifts out of Washington, D.C., combined with challenges like the rocky A2L refrigerant rollout, supply chain disruptions, tariffs driving up equipment costs, and the rollback of incentive programs have created instability for both professionals and consumers. At the same time, the industry continues to wrestle with workforce development and the need for stronger training and education. Yet, as always, **HVACR professionals are resilient — finding ways to adapt, innovate and move forward even amid daily changes.** ”

### INDUSTRY CHANGES



Beyond regulatory turbulence, the industry is experiencing a technological transformation. **Advancements in AI, smart systems, and digital tools are beginning to reshape how contractors, technicians, and manufacturers serve customers.** These innovations promise to streamline first-contact responsibilities, improve system efficiency, and open new opportunities for growth. While the short term presents challenges, the long-term outlook is exciting: a smarter, more connected HVACR industry that continues to evolve to meet the demands of tomorrow.

### Major Shifts



Understanding the way individuals learn is as important as the content being learned. **RETA-RSES is attempting to integrate modalities for all types of learners—and even trainers.** A major shift our Association has experienced is selecting partnerships with other groups to ensure proper training. We are working to create a clear, streamlined path to success for HVACR professionals.

### Pressing Issues



In the area of training and certification, one of the most pressing issues is the sheer amount of incorrect or incomplete information available online. **While new training opportunities are valuable, they have also created confusion around proper troubleshooting, repair, and installation practices.** Trial and error has no place in HVACR, particularly given today's complex technologies and safety concerns. Clear, standardized procedures and safety guidelines are essential to ensure technicians not only learn the right way to do things, but also recognize when a source of information may be unreliable. Building that sense of discernment has become one of the most important training priorities in the industry.

# RSES continued...

## Trending Topics

Training and certification remain at the forefront of industry discussion. With new platforms and delivery methods entering the market, **HVACR professionals now have more opportunities than ever to sharpen their skills and resolve field issues quickly — an especially valuable development for those with limited time.** That said, the abundance of readily available information online has also sparked concern. Not all sources reflect correct or safe practices, and misinformation can spread easily. The responsibility increasingly falls on individual professionals to evaluate their training sources carefully, ensuring the methods they adopt align with proper standards and safe procedures. This dual reality — expanded training access coupled with the need for discernment — is shaping the way the industry approaches workforce development today.

### A2L/A3L



In addition to training and certification, several emerging topics are generating strong discussion across the HVACR community. **The A2L transition remains a dominant theme, as professionals seek clarity on proper handling, safety protocols, and equipment compatibility.** A3s are also still prevalent in the marketplace, so safety training is imperative for professionals. Looking outside the U.S., I predict manufacturers stateside will begin to prepare for the next wave of refrigerants — prioritizing lower GWP and higher efficiency — to reduce the ongoing cycle of phasedown and phaseout requirements. Heat pumps, electrification and new building performance standards still appear to be driving both investment and consumer demand.

### SMART TECHNOLOGY



Technology integration and digital tools — from smart thermostats to AI-driven diagnostics and predictive maintenance — **continue to shape how contractors deliver service and how customers engage with their systems.** Customers are better-armed with information and technology preferences before a contractor even steps foot on the property. Having the patience and wherewithal to guide preliminary interpretations to suit the space and comfort needs is mandatory.

### WORKFORCE DEVELOPMENT



RETA-RSES continues to focus on workforce development and earlier exposure for students to the trades. **Companies are working to attract and train the next generation of skilled technicians** while navigating persistent cost pressures and material availability, and we plan to be there to assist in qualifying those techs for available positions.



## Opportunities Ahead

Product innovation, enhanced training and certification, and increased opportunities for knowledge-sharing and connection stand out as the most exciting opportunities in the year ahead. As new technologies, refrigerants, and efficiency standards continue to shape the marketplace, professionals will benefit from fresh tools to improve their craft and deliver greater value to customers. At the same time, **expanding education and stronger professional networks will ensure the workforce is equipped to meet these changes with confidence.** The HVACR industry is always evolving—meaning opportunities for growth and advancement are not only available, but accelerating.

## Challenges to Consider



One of the most pressing challenges continues to be the workforce shortage. The largest generation in U.S. history is on the cusp of retiring, and the incoming population is far too small to replace the number of skilled professionals leaving the field. This isn't just a recruitment issue—it's a demographic reality, compounded by the fact that multiple industries are competing for the same shrinking pool of workers. To adapt, **organizations will need to lean more heavily on technology, automation and smarter workflows to bridge the gap.** Workforce development, paired with technology adoption, will be the defining challenge — and opportunity — of the decade.

# RSES continued...

## Big Impact Innovations



AI-driven diagnostics, remote monitoring, and advanced training tools stand to make the biggest impact on the HVACR industry. **These innovations will be critical in helping a smaller workforce meet growing demand by streamlining troubleshooting, improving system performance and shortening learning curves for new technicians.**

Beyond the field, AI technology can also transform customer service and back-office operations — handling basic inquiries, scheduling, and administrative tasks that free up professionals to focus on higher-value work. Together, these innovations represent not just efficiency gains, but a fundamental shift in how the industry operates, helping organizations adapt to workforce shortages while improving service delivery for customers.

## Member Discussions



Regulations continue to dominate many of the conversations among our Members. With new refrigerants, procedures and technologies entering the market, professionals are navigating a steep learning curve. **Even those not directly impacted yet are feeling the ripple effects, as the uncertainty and constant change create disruption in their daily work.**

This directly connects to what they'll be looking for on the show floor: specific solutions, trusted partners, and credible resources that can help them cut through the noise. **Members are seeking clarity on compliance, reliable training to ensure safe practices, and technologies that will make the transition smoother.** The show provides a unique opportunity for them to find these answers, compare innovations side-by-side, and build relationships with the partners who will help them adapt with confidence.



## Looking Ahead to Vegas

I'm most looking forward to **engaging directly with HVACR professionals to better understand what they need to do their jobs more effectively.** I also love exploring the latest technology shaping the industry and to discover solutions that address workforce and customer demands. Of course, connecting with peers, manufacturers, and thought leaders to share ideas, exchange best practices, and build the partnerships that will carry the industry forward is on my to-do list, as well.

## HVACR in the Spotlight



HVACR professionals need to approach the flood of information with both patience and discernment. **The key is to rely on credible sources — industry associations, trusted publications, manufacturer training, and recognized certification programs — rather than reacting to every headline or social media post.** Staying current through ongoing education not only ensures professionals are operating with the right knowledge, but also allows them to confidently translate complex issues into clear, accurate guidance for customers. By doing so, they can cut through confusion, build trust, and reinforce their role as reliable experts in an ever-changing industry.



# From the FLOOR

**NAVAC**

Booth #SL255

**YI YI LI**Senior Manager of  
Marketing, HVAC Tools

## In a Nutshell

- Customer-driven, emerging topics include health consideration, A2Ls/A3 and supply chain updates
- The HVAC Supply Chain was dramatically affected by tariff increases. Also, the R454B shortage has aggravated users' negative sentiment towards excessive marketing on A2L topics.
- Opportunities ahead include the impact of AI-powered new technologies on the traditional HVAC industry is slowly emerging. Also, IOT products may evolve to the next level.

## Pressing Issues



There are a lot of private equity trying to join the game; in our particular sector (HVAC Tools), we have also seen a lot of acquisitions and mergers. Big capital inflows put both good and bad effects on the development of the industry, with one of the concerns being more profit-focused business models. However, **NAVAC's goal remains focusing on innovation and user experience, so we will not be disrupted.**

## Big Impact Innovations



The innovations that make the biggest impact are those that truly help users achieve their goals. **As a tool manufacturer, we believe innovation isn't about adding flashy, cutting-edge technology just for the sake of it.** That's like turning traditional, nourishing foods into processed ones — it may seem advanced, but it doesn't bring real value.

**True innovation happens when a product is built with a clear purpose: to empower users, simplify their work, and help them achieve consistent, reliable results.** Take our NAVAC NEF6LM flaring tool, winner of the 2023 AHR Innovation Award. Its success isn't just about the technology inside — it's because it makes flaring dramatically easier and produces perfect, leak-free flares every time. By enabling technicians to achieve their goal of flawless, consistent results with less effort, the NEF6LM has earned strong market acceptance.



## Important Discussions

We currently have several new product plans in development. Among those, some solutions bring real improvements to technicians' workflows, but without lab data or live demonstrations, it can be hard for users to fully grasp their value. While we can't reveal full product details yet, we're investing in small test platforms, hopefully available for the AHR Expo. We hope those platforms can let attendees see and experience how these innovations impact real-world applications.

Many of these performance improvements are invisible but significant. **By letting customers interact with these demonstrations, we aim to bridge that gap and clearly show how our innovations translate into measurable benefits.**



**GRUNDFOS** 

**Booth #C6516**

**DAVID MCMILLAN**  
Vice President of  
U.S. Sales, Domestic  
Building Services

## Trending Topics

### THREE TRENDS QUIETLY GAINING MOMENTUM IN THE BUILT ENVIRONMENT

Not every shift makes headlines right away. Some start quietly, but the signs are getting too big to ignore. Below are three emerging trends, the data behind them, and why they matter for the future of the built environment.

#### 1 The Water–Energy Connection — and the Data Center Factor

- U.S. data centers used an estimated 449 million gallons of water per day in 2021. *Source: Environmental and Energy Study Institute (EESI)*
- With AI workloads growing, global data center cooling demand could require 4.2–6.6 billion cubic meters of water annually by 2027 — more than half of the UK’s annual freshwater withdrawal. *Source: Nature Communications via Wikipedia*
- Some project requirements now call for both energy savings (kWh) and water savings (gallons) — a shift that was rare even a year ago.

##### **Why this matters:**

The water–energy nexus is becoming a competitive factor in system design. Data centers are just one example of energy-intensive facilities where water use is significant. As ESG reporting tightens, solutions that optimize both resources simultaneously will stand out and may soon become a minimum expectation in bids.

#### 2 Electrification is Changing Hydronic Systems

Heat pumps operate at lower supply water temperatures than traditional boilers, often in the 100–130°F range instead of 160–180°F. This is driving redesigns in hydronic heating and cooling systems — affecting controls, distribution piping, and heat emitters.

Manufacturers such as Danfoss, Armstrong, and Caleffi have begun offering ‘heat pump–ready’ hydronic components as standard SKUs, indicating a mainstream shift away from high-temperature-only designs.

##### **Why this matters:**

Electrification isn’t just a swap from gas to electric — it changes the physics of how heating and cooling systems operate. Designers, installers, and building owners who adapt early can avoid costly retrofits and position themselves for long-term efficiency gains.

#### 3 The Circular Economy is Entering Equipment Decisions

- Rebuilding electrical and mechanical equipment can use just 15% of the energy needed to manufacture new equipment, saving roughly 400 trillion BTUs annually — equivalent to 16 million barrels of oil. *Source: Professional Electrical Apparatus Recyclers League (PEARL)*
- Some OEMs now offer ‘remanufacturing pathways’ for key components, promoting them as part of the sales process rather than as an afterthought.

##### **Why this matters:**

The shift toward modular, serviceable, and recyclable designs reduces embodied carbon, cuts waste, and extends asset life. For building owners, this can lower lifecycle costs, improve ESG scores, and mitigate the risks of future waste regulations.

These three forces — water–energy efficiency, electrification-driven hydronic redesign, and circular economy adoption — are converging. The companies that deliver solutions addressing all three will be better positioned for competitive advantage in an increasingly resource-conscious market.



**DAVID MCMILLAN**  
Vice President of U.S. Sales,  
Domestic Building Services

### Pressing Issues

- **Regulatory readiness** — ensuring all sectors (hydronic, geothermal, hot water recirculation) are prepared for DOE efficiency standards before 2028.
- **Contractor training** — equipping installers to size, program, and commission ECM pumps for diverse applications.
- **Market inertia** — overcoming the tendency to default to legacy pump models despite proven efficiency gains with modern ECM technology.
- Integration with building automation systems (BAS) and renewable energy equipment to ensure system-wide optimization.

### Stop by our booth!

#### Booth #C6516

We host our annual Basement Event at our booth on Monday afternoon. Swing by and see our amazing future ready offering.

### Major Shifts



- **Increased urgency around pump efficiency regulations**, with the U.S. Department of Energy (DOE) circulator mandate taking effect in May 2028. While that date may feel distant, the time needed for product development, market education, and installer training makes early action essential.
- **Growth in geothermal/ground source heat pump (GSHP) installations**, requiring highly efficient circulators for ground loop and hydronic distribution circuits to maximize COP (Coefficient of Performance) and reduce operating costs.
- **Stronger market focus on domestic hot water recirculation pumps** that can save both water and energy, especially when upgraded to ECM (electronically commutated motor) technology.
- **Broad adoption of smart, variable-speed circulators** in hydronic heating, chilled water, GSHP, and hot water recirculation applications — shifting expectations from simply ‘moving water’ to delivering measurable comfort, reliability, and efficiency.

### Opportunities Ahead



- **Pre-mandate adoption programs** that target hydronic, GSHP, and hot water recirculation pumps to secure early energy savings and compliance advantages.
- **Geothermal loop optimization** — pairing GSHP systems with premium ECM circulators for better COP and lifecycle cost reductions.
- **Hot water recirculation efficiency** — upgrading millions of older-technology recirculation pumps in U.S. homes and commercial buildings to ECM models.
- **Retrofits in hydronic systems** — replacing oversized or fixed-speed pumps in heating and cooling loops with variable-speed ECM units for immediate operating cost reductions.

### Challenges Ahead



- **Education gap** — many installers are not yet confident in programming or commissioning ECM pumps for specialized applications like GSHP loops or demand-controlled hot water recirculation.
- **Price sensitivity** — high-efficiency pumps must be positioned with clear ROI (Return on Investment) and lifecycle savings data.
- **Product interoperability** — ensuring ECM circulators can communicate with diverse BAS platforms and renewable system controllers.



**DAVID MCMILLAN**  
Vice President of U.S. Sales,  
Domestic Building Services



## Big Impact Innovations

- **Self-optimizing circulators** that adapt to real-time system demand in hydronic, GSHP, and hot water recirculation applications.
- **AI (Artificial Intelligence)-enabled monitoring** for predictive maintenance, operational tuning, and system performance benchmarking.
- **Ultra-low standby modes** for pumps in intermittent-use systems, such as demand-controlled domestic hot water recirculation.
- **Pre-packaged ECM upgrade kits** for retrofitting older pumps without requiring major piping modifications.

## Member Discussions



- **How to accelerate ECM adoption** before the DOE mandate to avoid a late-stage market scramble.
- **Building contractor training programs** for hydronic, GSHP, and hot water recirculation applications.
- **Integrating circulator performance metrics** into whole-system efficiency claims for HVAC, plumbing, and renewable energy projects.
- **Leveraging utility rebate programs** to offset upgrade costs and encourage early change.

## Looking Ahead to Vegas



- **Seeing circulators designed to meet or exceed 2028 DOE standards** for all three categories — hydronic, GSHP, and domestic hot water recirculation.
- **Advances in smart control integration** that enable pumps to automatically optimize for both energy and water savings.
- Market discussions around **how to accelerate replacement of millions of legacy pumps** across all segments.

## Facts & Figures

Circulators account for  
**10-20%** of total electricity use  
in HVAC hydronic systems  
in commercial buildings

Optimizing pump selection  
and control in GSHP systems  
can improve COP by **5-15%**  
...significantly reducing  
lifetime operating costs.

Replacing fixed-speed pumps  
with ECM models can cut pump  
energy consumption by up to

- The U.S. has millions of legacy hydronic and geothermal circulators that could be retrofitted today for immediate efficiency gains.
- The U.S. also has millions of older-technology domestic hot water recirculation pumps that can be upgraded to ECM, delivering substantial energy and water savings.

**80%** in certain applications, including GSHP loops.



## COPELAND

Booth #C3607

**JOHN SCHNEIDER**  
President of Copeland's  
Americas Business

## Trending Topics

### DECARBONIZATION

Decarbonization has become **one of the most critical priorities in the HVACR industry**. This includes the electrification of heating and cooling systems, transitioning to more environmentally friendly, low-global warming potential (GWP) refrigerants and safeguarding food and pharmaceuticals through an efficient and sustainable cold chain. The industry's shift toward low-GWP refrigerants, including A2L classified refrigerants, CO2 and R-290, demonstrates a clear commitment to aligning heating and cooling technologies with environmental standards and mitigating impact to the environment. **Equally vital is the focus on food and pharmaceutical availability**, where innovations in advanced cold storage and real-time monitoring technologies reduce waste, maintain product integrity and reinforce the industry's pivotal role in global health and resource conservation.

### DATA CENTERS

Data centers are the **backbone of the modern digital economy**, providing essential data storage, processing and cloud-based services driven by rapid advancements in artificial intelligence (AI). The rise of AI is reshaping the data center landscape, with graphics processing units (GPUs) powering higher density computing needs and demanding exponential increases in energy and processing capacity.



By 2030, the global demand for data centers is expected to grow more than **3x** today's levels with consistent growth across all regions ([Source](#))

Traditional infrastructures are struggling to meet these escalating demands, pushing the need for new construction, retrofits, advancements in air cooling (i.e., "free" cooling) and emerging cooling liquid cooling technologies.

The data center industry's **focus on power consumption is critical to meeting future demand**. Operators are increasingly adopting technologies aimed at reducing energy consumption to improve power availability to meet IT loads. Copeland plays a critical role in this evolution, delivering advanced technologies like the new oil-free centrifugal compressor with Aero-lift™ bearing technology, and variable-speed scroll compressors with variable frequency drives. With partnerships spanning over 20 original equipment manufacturers in the data cooling segment, **Copeland helps ensure efficient, reliable and environmentally responsible operation in even the most demanding data center environments**. By leveraging decades of HVACR expertise, full-system integration capabilities and data analytics, Copeland is not only addressing current challenges but also shaping the future of data center cooling while supporting the sector's projected significant growth for the next several years.

### THE GRID

Global energy demand from HVAC and refrigeration energy consumption is expected to triple by 2050, presenting a significant challenge for energy efficiency and sustainability.

To address this, Copeland has partnered with utilities across North American, participating in

**159** demand response programs that resulted in **5,253** events to help reduce stress on the energy grid during periods of peak demand

### HEALTH CONSIDERATIONS

The number of mid-sized hospitals (200-300 beds) with decentralized administration is growing, **driving demand for reliable solutions to ensure operational efficiency and compliance**. In addition, as global supply chains evolve, the distances food and medicines travel continues to grow, with stringent medical regulations requiring consistent temperature set-points for storage, transport and audits. With the approval of temperature-sensitive medications, such as cell and gene therapies, growing annually by up to 20%, maintaining precise temperature control is more critical than ever. Furthermore, the adoption of cloud-based analytics and real-time data is reducing the reliance on physical data warehouses, enabling more efficient management of cold chain logistics. These trends, combined with the escalating complexity of regulatory compliance and the demand for traceability, heighten the risks of errors in critical processes.

## COPELAND

**JOHN SCHNEIDER**  
President of Copeland's  
Americas Business

### Trending Topics con't.... INDOOR AIR QUALITY

Heating and air conditioning accounts for approximately 30% of a commercial building's energy consumption, and according to the [National Renewable Energy Laboratory](#), air conditioning produces approximately 1,950 million tons of global carbon dioxide annually, with 30.7% attributed to the energy needed for humidity management. Achieving optimum comfort in commercial buildings requires an ideal balance of temperature and humidity, a challenge that falls heavily on commercial HVAC systems. These must manage humidity to maintain thermal comfort and help improve air quality. However, high humidity levels can accelerate issues like coil corrosion, mold growth and ductwork damage, further reducing system efficiency and increasing maintenance expenses.



### Trending Topics con't....

#### REFRIGERANTS

Driven by environmental regulations and sustainability objectives, the HVACR industry is undergoing a global refrigerant transition — shifting from high-GWP hydro-fluorocarbon (HFC) refrigerants to the next generation of lower GWP alternatives. In the U.S., the EPA's Technology Transitions Rule has set sector-based GWP limits, the first of which took effect in 2025 in the residential HVAC sector which led to the industry transition to A2L refrigerants.


To support this transition, Copeland fully transitioned its HVAC compressor portfolio to A2L refrigerants in both commercial and residential applications, helping to enable the transition to the lower-GWP refrigerants. For HFC-based systems currently installed, Copeland has released the LXE service compressor platform to simplify support and servicing of legacy R-410A systems.

Subsequent transitions in the commercial refrigeration sector are also underway. Copeland has prepared for this transition by expanding our refrigeration product portfolios for use with R-290, A2L and CO2 refrigerants, reflecting our commitment to sustainable, low-GWP solutions for commercial refrigeration. For example, Copeland will soon be launching a transcritical CO2 scroll compressor platform in the U.S., adding to our comprehensive CO2 solution portfolio and unlocking new opportunities for more flexible, distributed CO2 booster system architectures.

#### CYBERSECURITY

As the world becomes more connected and innovative smart home technology continues to evolve, data privacy has emerged as a critical concern and a significant barrier to adoption. Copeland's second 'Smart Home Data Privacy' survey, conducted in late 2024, reveals a sharp rise in both the ownership of smart home devices, including smart thermostats, TVs and appliances, and in homeowner concerns about data privacy since the first survey in 2022. The study found that 27% of homeowners with smart home devices were concerned about the security of their data in 2024, compared to 23% in 2022. However, the findings also highlight a fundamental gap in understanding and attitudes towards smart tech and data privacy:

 **52%** of homeowners are unaware of how data is collected from smart thermostats

 **14%** of smart thermostat owners researched a manufacturer's data privacy policy before purchase.

Confidence in manufacturers responsible use of data is lower among those who don't own smart thermostats compared to smart thermostat owners:

**58%** vs. **73%**  
don't own do own

This suggests that this concern could deter potential buyers.

## COPELAND

**JOHN SCHNEIDER**  
President of Copeland's  
Americas Business

 Major  
Shifts

While we see growth in the adoption of both heat pumps and smart home technology, the HVACR industry experienced significant shifts over the past year. Chief among them are the **continued transition from legacy HFC refrigerants to lower-GWP alternatives as well as economic uncertainty associated with tariffs and high interest rates.**

Contractors are also navigating **challenges from economic pressures and the refrigerant transition.** Many contractors are now installing new residential air conditioning and heat pump equipment optimized for A2L refrigerants. Preparations are underway to continue transitioning A2L, CO2 and R-290 refrigerants across more U.S. HVACR applications over the next several years, including commercial refrigeration and HVAC, and industrial cold storage. .

Although this is not the first refrigerant transition our industry has faced, its scale and accelerated timeline make it unprecedented. Meanwhile, **the influence of global trends like decarbonization is driving efforts** to replace gas-powered space and water heating systems with electric heat pump technologies.

## Pressing Issues

### WORKFORCE DEVELOPMENT

The industry is facing a growing skills gap, as **demand for highly trained technicians who can operate and install next-generation systems continues to outpace supply.** This gap is especially pressing with the rollout of A2L and CO2 refrigerants and the technical challenges associated with their safe handling and increased system complexities. The broader transition to low-GWP, climate-friendly refrigerants necessitates advanced training programs to prepare technicians for rapidly changing system and equipment architectures. Training initiatives are critical to equip contractors and technicians with the knowledge needed to install and service systems optimized for A2Ls and CO2 refrigerants.

### EPA RECONSIDERATIONS

Under the new administration, the EPA has called for a reconsideration of its Technology Transitions Rule, **calling into question the remaining sector-based GWP limits and transition timelines.** In commercial refrigeration, remote condensing units and rack systems were expected to transition to lower-GWP alternatives in 2026 and 2027, respectively. The industry is now waiting for clarity on how these reconsiderations may impact timelines or GWP limits.

### EFFICIENT TECHNOLOGIES

At the same time, the **global emphasis on the energy transition calls for a shift to more efficient, electrified systems,** further increasing the need for innovative solutions and workforce education. Safeguarding food and pharmaceutical supply chains through efficient and sustainable cold chain technologies has also become a critical focus for the industry. Copeland is leading efforts to tackle these multifaceted challenges by offering innovative solutions and resources.

## Opportunities Ahead

### DATA CENTER GROWTH

We expect specific commercial segments to grow at above-average rates, especially in **mission-critical applications like data center cooling and process chillers.** Due to the rising demands of AI, the data center market is poised for strong growth over the next several years. The rise of high-density, AI-driven computing workloads is creating new and complex demands for data center cooling and energy management.

### HEAT PUMPS

HVACR industry is seeing significant growth opportunities through the **continued adoption of heat pumps for residential, commercial and industrial applications** used in space, water, district and process heating. The global push toward electrification is driving the need for advanced heat pump technologies that can retrofit and/or replace gas-fired systems to reduce carbon emissions and enhance energy efficiency.

**COPELAND**

**JOHN SCHNEIDER**  
President of Copeland's  
Americas Business

**Facts & Figures**



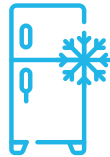
Heating accounts for almost  
**20%** of energy use in  
industry & buildings globally

and about  
**25%** of energy-sector emissions  
*(Source)*

The world population is expected to be:  
**9.8B** people in 2050

**Tripling**

HVAC and refrigeration energy consumption *(Source)*



Each year, approx.  
**526M** tons of food go to waste due to a lack of effective refrigeration *(Source)*

In road-based refrigerated transportation, the **refrigeration system accounts for approx. 10%** of the vehicle's total fuel consumption *(Source)*

Heating in buildings is responsible for  
**4 gigatons** of CO<sup>2</sup> emissions annually

which is almost  
**10%** of total global emissions.

*(Source: International Energy Agency)*

Global energy demand from air conditioners is expected to  
**triple** by 2050, resulting in

**10** new air conditioning units sold every second for the next 30 years. *(Source)*



Heat pumps have the potential to  
**↓ reduce global carbon dioxide emissions**

by at least  
**500M** tons by 2030 *(Source)*



The global heat pump stock must grow by

**~13%** per year through 2030 to reach the 2050 net-zero targets. *(Source)*



Booth #C4925

### KEVIN RUPPELT

Senior Vice President  
and General Manager,  
U.S. Air Division

## Major Shifts

Rheem has noted several industry shifts since the previous AHR Expo, from tariffs and updated incentives to evolving certification standards and the growing role of AI and technology in our field.

### SHIFTING HVAC LANDSCAPE

Due to the current economic climate and tariffs, Rheem is seeing **increased costs for raw materials and components** used to build HVAC equipment. While these cost pressures are a reality, so far, it hasn't had a direct impact on demand.

### UPDATED INCENTIVE PROGRAMS

On July 4, 2025, Congress enacted Public Law 119-21, bringing **notable changes to tax credits for energy-efficient HVAC upgrades**. The law officially ends the Energy Efficient Home Improvement Credit (25C) on December 31, 2025, meaning homeowners can only claim this incentive on qualifying purchases, like heat pumps, furnaces, and air conditioners, through the end of the 2025 tax year.

### EVOLVING CERTIFICATION STANDARDS

With the EPA finalizing the sunset of the ENERGY STAR specification for Central Air Conditioners (CAC), effective Feb. 1, 2026, it **marks a shift in third-party certification standards**.

### AI & TECHNOLOGY TRANSFORMING THE INDUSTRY

As mentioned, technology in the industry continues to advance. **From load calculation software to AI-driven diagnostics, HVAC systems are becoming increasingly data-centric**. For example, at Rheem's manufacturing facility in Fort Smith, Arkansas, the company is leveraging robotic systems and code-driven automation to enhance factory line operations. Additionally, as technology continues to reshape fieldwork, contractors are embracing the efficiencies it brings. Rheem's tech-integrated products reduce the physical demands of installation, such as entering attic spaces, by offering smarter, more accessible setup tools.

## Trending Topics

Several trends taking place across the industry include A2L shifts, new technology and plumbing. Key trend insights include:

### A2L

One of the largest trends currently impacting the HVAC/R industry is the **transition to A2L refrigerants, and it's reshaping everything from product design to contractor training**. For OEMs, this has meant re-engineering systems to safely accommodate A2Ls without compromising performance or reliability. For contractors and technicians, it means adapting to new tools, safety standards, and certification requirements. The A2L transition is part of a broader industry effort to decarbonize and electrify.

### NEW TECHNOLOGY

Technology within the industry **continues to evolve to better meet the needs of efficiency, sustainability, connectivity, and workforce development, while keeping pace with ever-changing innovations**. For example, the U.S. Department of Energy (DOE) has issued updated energy efficiency standards, effective in 2029, that will continue the industry's shift toward heat pump water heating technologies. Additionally, most electric water heaters sold after 2029 will be required to be heat pump models. In the building heating category, we are seeing substantial improvements in heat pump performance in cold climates, which is leading to growing acceptance among consumers and building owners. Advanced energy efficiency technologies, such as inverter controls and VRF systems, are gaining momentum, enabling zoned, individual air conditioning. Rheem is also keeping a pulse on connected technologies to enable a better consumer experience, and we are excited to share more about this at AHR 2026.

### PLUMBING

We continue to see growth in smart, connected water heaters. With user-friendly features like leak detection and automatic water shutoff, energy usage monitoring, a scheduling feature to take advantage of time-of-use pricing, and the ability to send alerts directly to your plumber from your smartphone, **homeowners have more control over their water heater than ever before** and can customize its performance to their needs.



**KEVIN RUPPELT**

Senior Vice President and General  
Manager, U.S. Air Division

## Opportunities Ahead

The HVAC/R and plumbing industries are at a pivotal moment, with **shifting regulatory landscapes and accelerated innovation creating both pressure and opportunity**. Clean energy goals and electric utilities requirements for decarbonization require the industry to respond with smarter, cleaner and more connected solutions.

Over the next 1-3 years, we anticipate the HVAC market will continue to evolve, with a **strong focus on efficiency and sustainability, even as economic conditions remain uncertain**. From Rheem's perspective, we're investing heavily in training and product innovation to help our partners navigate this evolving landscape.

Rheem also sees opportunity in a **new generation of technicians who are bringing modern skill sets, digital fluency, and a sustainability mindset to the field**. Their impact will be instrumental in helping the industry embrace new technologies, meet evolving codes and standards, and deliver the change consumers are expecting.

We're also seeing an **uptick in contractors expanding their capabilities to become a one-stop-shop** and offering HVAC and plumbing services under one roof. The multi-trade approach is gaining traction as homeowners and builders alike look to streamline service and trusted partners. This also opens new growth opportunities for contractors who are interested in investing in integrated solutions.

## Pressing Issues



Key challenges facing the industry include evolving regulatory and environmental compliance requirements, workforce dynamics such as an aging technician base and the need for upskilling in new technologies, as well as ongoing supply chain disruptions.

For commercial, there is a **steady demand for upgrading older buildings with new, energy-efficient systems**. Regulatory compliance, like building performance standards and refrigerant changes, is also putting pressure on decision-makers to act sooner rather than later.

Additionally, it's likely that **we will have to rely more on BMS control systems to operate buildings**, as people who have historically operated buildings are starting to retire, and there aren't as many individuals coming into that line of work.

Industrial faces more challenges, especially with larger systems and complex infrastructures. **Supply chain disruptions, skilled labor shortages, and higher upfront costs** for electrification or decarbonization retrofits can slow adoption.

As mentioned, on the residential side, **changing regulations are a reality**. The DOE has already issued updated energy efficiency standards that will result in a meaningful shift to heat pump water heating technologies, starting in 2029.

With the changes in mind, **manufacturers need to scale manufacturing, invest in tooling, and actively design for the next generation of these products**.



## Challenges Ahead

Workforce development challenges have been rising in the HVAC/R industry. This is not only about filling open roles, but also about **changing perceptions, highlighting long-term career paths, and creating access to training** that meets the evolving needs of today's technologies.

Rheem is also **closely watching the pace of regulatory change**. With shifting efficiency standards and refrigerant transitions accelerating, manufacturers, contractors, and distributors alike are under pressure to adapt quickly. Ensuring the entire value chain is educated and aligned will be critical.



**KEVIN RUPPELT**

Senior Vice President and General  
Manager, U.S. Air Division



## Member Discussions

Important discussions we're currently having center around **how we can continually improve the installation, maintenance, and repair process** for our customers, whether they are contractors, homeowners, or business owners. We're focused on making the experience faster, smarter, and more reliable.

One example of this commitment is our **Contractor App-based commissioning**, which uses Bluetooth technology to simplify setup. This tool has been shown to deliver up to 54% faster installation and 62% faster diagnostics compared to other residential HVAC brands.

These advancements are visible on the show floor in our multi-trade product solutions, which are shaped through key initiatives: the **Product Excellence Panel (PEP) and our ongoing Voice of Customer (VOC) efforts**. The PEP is a multi-day collaboration involving internal teams and external partners working together to understand real-world customer challenges and transform them into practical, innovative products.

Driven by insights from both the PEP and VOC, **we're ensuring that everything we develop addresses genuine customer pain points**. These conversations and collaborations are at the heart of Rheem's strategy, and they're what power the innovations that can be seen in our booth.

## Big Impact Innovations



### TECH-DRIVEN SOLUTIONS

Innovations that support the transition to more sustainable, connected, and flexible HVAC/R systems are leading the way with electrification at the center. Technology-driven solutions, including smart diagnostics, integrated controls, and enhanced system connectivity, are **helping both consumers and contractors make more informed decisions while maximizing performance**.

### HEAT PUMP DEVELOPMENT

Manufacturers are expected to continue prioritizing heat pump development in the coming years. This shift is largely driven by evolving energy efficiency standards. These factors, combined with recent changes like the DOE's SEER2 standards, have **accelerated interest and investment in high-efficiency, connected, and variable-speed heat pump technology**.

### AC SYSTEMS

That said, **air conditioners remain a strong option**, particularly in consistently hot climates where heating isn't a major concern. AC systems are widely installed and can be the right solution for many homeowners, depending on regional needs and household priorities.

## Looking Ahead to Vegas



We're excited to connect with our customers in person at this year's AHR Expo. These **face-to-face conversations with contractors, distributors, and technicians are invaluable**, providing us direct insight into what's working, what's evolving, and how Rheem can continue to better support the people who power our industry.

We're also proud to showcase our latest innovations and product solutions. **AHR Expo is the ideal platform to debut next-generation technologies and highlight our commitment to sustainable, forward-thinking solutions**.

Beyond the products, we look forward to sharing knowledge through dynamic panel discussions and interactive booth demonstrations. **The collaboration and energy at AHR Expo are unmatched**, and we're honored to be part of shaping the future of HVACR together.



Booth # SL1312 & SL1320

**DAVID RAMES**  
Senior Product Manager

## Trending Topics

### SIMPLE & RELIABLE

The market is moving toward **high-performance, rebate-eligible systems that simplify installation and deliver reliable comfort in all climates**. Cold-climate electrification is now mainstream, with systems like Midea's forthcoming EVOX All Climate Heat Pump providing up to 100% heating down to -31°F (-35°C) and continuous operation down to -40°F (-40°C). Contractor-friendly design, such as six-way block-n-lock modular AHUs, dual-voltage compatibility and flame-free flair fittings, addresses persistent labor shortages.

### EFFICIENCY

Rebate-ready products meeting CEE Advanced Tier and ENERGY STAR Most Efficient criteria are helping contractors close more projects. In dense urban retrofits, **Midea's Packaged Window Heat Pump** offers quick installs with proven 87% energy savings.

### WORKFORCE DEVELOPMENT

Workforce development is critical to adoption; **Midea's regional showrooms and trade school partnerships deliver hands-on training** to equip contractors for advanced heat pump technology. Smart, connected controls and demand-response compatibility are also top customer priorities, ensuring systems are not only efficient but future-ready.



## Major Shifts

Since AHR Expo 2025, the One Big Beautiful Bill Act (OBBBA) has reduced federal incentives like 25C and 45L, **prompting a shift toward more affordable, installation-friendly heat pumps that still qualify for strong state and utility rebates**, with up to \$10,000 in some areas. Contractors are prioritizing systems like Midea's EVOX G3 and forthcoming All Climate Heat Pump, offering dual-voltage compatibility, modular AHUs and drop-in sizing for faster retrofits. Homeowners value year-round performance (up to 100% heating at down to -31°F and up to 100% cooling at up to 140°F) paired with remaining rebates, keeping electrification momentum strong without relying solely on federal tax credits.

## Pressing Issues

Industry-wide, the **biggest challenges include workforce shortages, evolving refrigerant regulations and adapting to shifting incentive structures**. Contractors need more training on A2L refrigerants, inverter systems and cold-climate installation practices.

In Midea's sector, we're addressing these gaps through a dedicated workforce development strategy. This includes regional showrooms in the U.S. and Canada that double as hands-on training hubs, partnerships with trade schools like Orange Technical College and technical support sessions led by our engineering team. By equipping contractors with the skills to install and service advanced heat pump systems, we're ensuring they can meet growing electrification demand with confidence.

## Opportunities Ahead

### COLD-CLIMATE HEAT PUMPS

The coming year presents **strong growth potential in cold-climate heat pump adoption**, driven by stricter building codes, municipal gas bans and robust state and utility incentives. For contractors, this means expanded retrofit opportunities, especially with ducted systems like Midea's EVOX G3 that drop into existing footprints with minimal electrical or structural changes.

### RETROFITS

Multi-family and public housing retrofits are another high-growth segment, where **solutions like Midea's Packaged Window Heat Pump enable fast, low-impact installs with proven energy and cost savings**. Coupled with smart controls, rebate eligibility and growing consumer awareness, these opportunities position the industry for sustained electrification momentum in 2026.



**DAVID RAMES**  
Senior Product Manager

## Challenges Ahead

The HVACR industry faces three near-term hurdles: the **ongoing skilled labor shortage**, the **2025–2026 refrigerant transition to low-GWP A2Ls** and **uncertainty around incentive program funding**. Contractors will need training on safe A2L handling, inverter commissioning and advanced cold-climate installation practices.

**Midea is watching policy changes closely**, particularly shifts in rebate structures and electrification mandates that influence market demand. Through workforce development partnerships, regional training showrooms and technical support programs, we're preparing contractors to navigate these changes. By focusing on installation readiness and compliance, we aim to ensure advanced heat pump adoption continues without disruption.

## Looking Ahead to Vegas

AHR Expo remains the **best venue for connecting with industry leaders, contractors and technology partners driving the next phase of HVAC innovation**. This year, the focus will be on solutions that make cold-climate heat pumps even easier to install, service, and integrate with connected home platforms. Advancements in A2L-compatible tools, smart controls and modular system design are of particular interest, as they align with contractor demand for efficiency and adaptability. The show also provides a valuable platform for workforce development discussions, helping align manufacturers, educators and installers around the skills needed for the industry's rapid electrification shift.

## Big Impact Innovations



Cold-climate heat pump advancements will have the biggest near-term impact, particularly systems delivering up to 100% heating at extreme lows, like **Midea's forthcoming EVOX All Climate Heat Pump performing down to -31°F (-35°C)**. Contractor-focused design (modular AHUs, dual-voltage compatibility, flame-free flair fittings) will also be game-changing by reducing labor time and installation barriers.

In dense urban retrofits, packaged solutions like **Midea's PWHP, which installs in under an hour and has proven 87% energy savings, open entirely new markets**. Paired with smart controls, demand-response capability and broad rebate eligibility, these innovations will drive both contractor profitability and rapid electrification in the years ahead.

## Member Discussions



Key conversations with both Midea teams and customers focus on **preparing contractors for the A2L refrigerant transition, simplifying cold-climate heat pump installations and ensuring systems meet top-tier rebate criteria**. Demand is high for equipment that fits existing footprints, minimizes electrical upgrades and delivers verified performance in extreme temperatures.

**These priorities align closely with AHR Expo 2026 discussions around smart, connected controls, contractor training resources and innovative installation ideas**. Advancing these solutions will help contractors complete projects more efficiently, reduce installation barriers and expand access to high-performance heat pump technology in both retrofit and new construction markets.

## Midea at AHR Expo Vegas

Midea will have a strong presence in Las Vegas, starting with a press office daily sponsorship on Tuesday. This includes high-visibility signage, branded materials in the press office and a lunchtime press conference. We'll also participate in the Workforce Development Student Experience, hosting a scheduled student stop at our booth, joining the Workshop/Industry Professional Panel and providing branded items to attendees. **These engagements highlight our commitment to industry education, workforce training and innovation**. Details on our booth location, press conference timing and product showcases will be announced closer to the show.

**BOSCH****HITACHI**  **YORK****Booth #C4007****DAVID BUDZINSKI**Deputy CEO Global,  
President Americas, Bosch

## Trending Topics

### A2Ls

The introduction of A2L refrigerants has shifted the way HVAC equipment is manufactured, installed and serviced. As a result, **we are seeing how the use of low-GWP refrigerants, including the emerging use of R-32, can expand operating capacities and enhance energy efficiency.** The Hitachi airHome Ductless Heat Pumps are a prime example of this progress, with units maintaining 100% capacity in as low as -4°F. This level of performance is due in part to the refrigerant's exceptional compression ratio, which can deliver higher heating performance in low ambient conditions.

Alongside this innovation, **we remain committed to supporting the industry throughout the transition.**

In both commercial and residential applications, education about these new refrigerants and their safe handling is imperative. To support those involved, we've compiled a library of free, online A2L resources and developed in-person and virtual training courses available from our Ducted Systems Academy.

One of the biggest challenges we hear from our partners is adopting new safety standards, like recognizing when a Refrigerant Leak Detection Systems (RDS) is required for an application. **The RDS Calculator available in our free Go Temp Pro App is designed to simplify the process.** A contractor enters details about a job, such as refrigerant volume, supply air discharge height and total area being conditioned, then the calculator provides an immediate report confirming if an RDS is required for A2L equipment or not.

### DECARBONIZATION

Decarbonization offers a **powerful opportunity to drive meaningful environmental impact while also reducing operating and utility costs.** With rapid efficiency advancements in heat pump development, we are working toward the solutions we need to achieve these outcomes, and we have products available today that are great steps in that direction.


Commercial buildings are responsible for approximately 35% of U.S. carbon emissions and 40% of overall energy use. Similarly, residential accounts for 21%. **States and municipalities are adopting performance standards or regulations with emission reduction requirements,** and many corporations have set their own environmental targets. Meeting them requires the incorporation of highly efficient assets, including HVAC equipment.

Commercial heat pump RTUs like our new, **YORK® Sun™ Premier 90–150-ton RTUs deliver superior performance and efficiency in commercial buildings.** The RTUs combine variable-speed compressor options and variable-speed drive fan options with advanced airflow and heat transfer technologies to deliver a highly optimized system that can provide up to 31% greater efficiency at part-load to reduce operational costs and energy consumption.

Air-to-water heat pumps are another technology that can achieve considerable gains regarding sustainability and efficiency. **The Hitachi Yutaki M R32 Monobloc Air-to-Water Heat Pump is an all-in-one solution** that can deliver efficient heating and cooling while also serving as a domestic water heater or source to heat a pool or radiant floors. These exceptional capabilities are made possible by a newly designed, vapor injection twin-rotary compressor that enhances performance within cold climates and supplies 131°F water even at -4°F ambient temperatures.

In addition to these heat pumps available now, our group is working to ensure **long-term performance through our partnership with the Department of Energy (DOE) Commercial Building Rooftop Heat Pump Accelerator program.** As we advance within the program, our engineers are building upon the proven technologies utilized within our existing rooftop unit portfolio and optimizing features such as vapor injection compressors and direct-drive fans to further enhance efficiency levels and performance within low ambient conditions.



HITACHI  YORK<sup>®</sup>

**DAVID BUDZINSKI**

Deputy CEO Global, President Americas, Bosch

## Trending Topics con't...

### THE ELECTRIC GRID

Electrification is an essential part of decarbonization. **One way to advance electrification is through the increased adoption of heat pumps that can replace fuel-burning and electric resistance heat sources.** We are continuing to make these systems more accessible to both commercial building operators and homeowners by offering an outstanding range of solutions that make electrification a viable option in all regions – even within colder climates.

For homeowners, the YORK<sup>®</sup> HH8 Side-Discharge Heat Pump offers up to 18 SEER2 variable-speed performance with cold-climate compatibility delivering approximately 70% of its rated heating capacity at 0°F or -18°C. With a compact footprint that is up to 30% smaller than traditional equipment, the HH8 can be stacked, placed under raised decks or installed in zero lot-line neighborhoods, making it a flexible option as a primary heat source, or as part of a dual fuel system.

The Hitachi air365 Mini air-sourced VRF provides reliable electrified heating and cooling within outdoor conditions as low as -13°F in heating mode and up to 118°F in cooling mode. With 1:1 and 1:Multi configurations available, air365 Mini is a flexible solution for both multi-room commercial and residential applications.

## Trending Topics con't...

### REFRIGERANT REGULATIONS

We continue to see the advantages low-GWP refrigerants like R-454B have created within the industry. **Equipment utilizing these refrigerants not only offers a solution for environmental compliance but also helps to reduce operating and utility costs by enhancing energy efficiency.** We are proud to be among the first in market to transition the majority of our residential product portfolio and commercial RTUs for use with R-454B.

We acknowledge this transition has not been without some disruptions. The R-454B shortage is a legitimate concern for the businesses impacted, but we have already started to see improvements within the supply chain. As we continue to navigate this transition together, **we are proactively supporting our channel partners, dealers and contractors with additional access to refrigerant.** And, as ever, we strongly encourage all parties to maintain ASHRAE best practices for safe refrigerant handling, reclamation and transportation.

### MAJOR SHIFTS/NEW TECHNOLOGY ON THE HORIZON

Dual fuel systems that combine electric and gas energy sources provide a **flexible opportunity to drive efficiency and lower operating and utility costs** for both commercial building teams and homeowners.

Using this combination, **building operators and homeowners can gain the advantages of electrification by using a heat pump for cooling and heating when the ambient conditions are conducive.** If outdoor conditions drop below the heat pump's operating range, the system will seamlessly transition to a gas furnace as auxiliary backup heating to maintain efficiency and comfort.

The Bosch IDS Ultra is a new air-to-air cold climate heat pump designed specifically for high efficiency heating in cold climates. It provides 100% heating capacity down to an outdoor temperature of 5°F and will continue to operate even down to -13°F. For a matched dual fuel system, it can be paired with the Bosch BGH96 Gas Furnace for even greater efficiency and cold-weather performance.

From dual fuel RTUs to residential heat pump offerings, we've optimized our portfolio to offer flexible solutions that make electrification achievable and energy-efficient in all climates – even within very cold regions.

- [National Renewable Energy Laboratory \(September 2023\)](#), “NREL Researchers reveal how buildings across United States do – and could – use energy”
- [Department of Energy \(2025\)](#), “U.S. Residential Building Stock Analysis”
- [Department of Energy, Better Buildings \(2025\)](#), “Commercial building heat pump accelerator”

## Challenges Ahead

Significant advancements in heat pump technologies create an exceptional cost- and energy-savings opportunity in both commercial and residential applications. However, we still face challenges around communicating and educating end users on the benefits of moving to high-efficiency heat pumps both as a standalone and dual fuel solution.



HITACHI  YORK<sup>®</sup>

**DAVID BUDZINSKI**

Deputy CEO Global, President  
Americas, Bosch

## Major Shifts

Since AHR 2025, the industry has experienced some unpredictability surrounding the previously established efficiency regulations and federal incentive programs designed to offset the costs of high efficiency commercial and residential systems. However, there are still many options available that can help make these premium solutions widely accessible, including manufacturer's rebates, state programs and utility incentives. **The combination of the long-term operating and utility cost-saving opportunities** these systems can achieve creates a compelling offer for building professionals and homeowners – and an opportunity for contractors to meet the needs of their customers while growing their business.

## Pressing Issues



### WORKFORCE DEVELOPMENT

From my perspective, one of the most pressing issues the industry faces right now is **training and mobilizing the workforce on new refrigerant technologies**. Part of that education needs to incorporate an understanding of the regulatory environment and upcoming regulation changes.

### REGULATIONS

The standardization of regulations is another industry issue, particularly here in North America. Right now, there is regulatory inconsistency across states and regions. **Greater consistency would support the industry, homeowners and building operators, alike.**

## Opportunities Ahead



Ductless HVAC systems present a growing opportunity as **homeowners seek flexible solutions that can reduce their utility bills while maximizing comfort – even within colder climates.**

The flexible design is also ideal for residential applications where existing ductwork is not in place, like in older homes or room additions.

The new **Hitachi airHome series utilizes the low-GWP refrigerant R-32**. Within the collection of ductless heat pumps, Hitachi airHome 600 and 800 are engineered to operate at 100% capacity in ambient conditions as low as -4°F. At the core of this innovation is Hitachi HeatForce technology. The feature combines a large-capacity accumulator optimized to meet the unique demands of low-temperature condensing, and a cascade vector DC inverter system that precisely controls compressor speed to enhance energy efficiency.

## Member Discussions



Right now, discussions are **primarily focused on contractors**, helping them mobilize their workforce and understanding how we can help simplify installation, commissioning and service for them.

As a result of these talks, **we've developed easy-to-use smart tools to help streamline these processes for contractors on the job**. Our Go Temp Pro app is a free tool that provides instant access to product information and resources including product details, installation manuals and commissioning and start-up guides.



HITACHI  YORK<sup>®</sup>

**DAVID BUDZINSKI**

Deputy CEO Global, President  
Americas, Bosch

## Looking Ahead to Vegas

As always, I'm looking forward to connecting with industry associates, peers and customers. This **in-person time provides a valuable opportunity for us to strengthen those relationships and gain insightful, voice-of-customer feedback** – information that we regularly use to inform the development and distribution of our equipment. I'm also excited to announce our new combined company, Bosch Home Comfort Group and becoming a global climate comfort champion and providing customers with a full suite of air and water solutions.

## Big Impact Innovations

The Department of Energy (DOE) estimates that **high-efficiency dual fuel heat pump RTUs have the potential to reduce energy costs in commercial buildings by as much as 50% compared to traditional RTU systems.** This provides a significant opportunity for building professions to make meaningful progress toward their decarbonization goals while realizing long-term cost-savings.

We've fully **optimized our dual fuel RTUs like the YORK<sup>®</sup> Sun<sup>™</sup> Choice Dual Fuel RTU and YORK<sup>®</sup> Sun<sup>™</sup> Pro Dual Fuel RTU to offer energy-efficient operation,** compared to similar units, in all regions including very cold climates. The packaged units feature a dual circuit refrigeration design allowing for multiple compressor staging options to maximize efficiency within colder climates. Built-in intelligence allows the systems to transition to the most optimal energy source based on customizable settings and outdoor conditions, as well as providing an added layer of redundancy and reliability.

Today's building owners and operators are increasingly being pressed to do more with less. **Dual fuel RTUs provide an option to enhance energy efficiency, reduce operating costs and make progress toward decarbonization goals** – without the challenges and costs of complex equipment or controls.



# From the FIELD



 @JUSTWORK\_HVAC

**Rodolfo Vargas**

Owner, Galaxy Home Services;  
HVACR Contractor

“ I’m following changes that are being made without true tested techs and the leadership in our industry, specifically with A2Ls.”



## In a Nutshell

- **Opportunities Ahead:** The industry looks great with the younger generation coming up and being excited to learn.
- **Looking Ahead to Vegas:** All the new AI that will help HVAC technicians in the field.
- **Challenges Ahead:** There are many changes with refrigerants, SEER ratings and proper air flow.



 @alltradespaige

**Paige Knowles**  
Author, Speaker, Creator

“ The HVACR industry is in need of more skilled workers. As we look toward 2026, the demand for talent is still high!”



**What are some trending topics you have been following?**

As an advocate for the skilled trades, the biggest topics being discussed are **workforce shortages, training opportunities, and making the industry more visible to young people.**

Things are always changing in the industry, and those shifts, hopefully for the better, affect our daily work. Staying up to date is important for both safety and efficiency. With so much new technology, the field feels more exciting than ever, which could help bring in the next generation of workers.



**What are some upcoming changes that will effect your sector of the industry?**

I think we have seen more effort around workforce development and attracting the next generation. **More students are encouraged to learn about the trades and more companies are stepping up to show what a great career it could be.** Long term though, a concern is retaining these young people.



**What opportunities lie ahead for HVACR/HVACR professionals in the coming year?**

There's a huge opportunity to attract more young people to the trades through education, outreach, and showing just how interesting this work can be. I contribute to this through **social media content, speaking at schools and industry events, and publishing books for kids to learn** about system's in their homes and start the conversation about these less-traditional careers early.

## In a Nutshell

- **Major Shifts:** There's a lot more smart technology and new equipment changing the way we work, which makes the trade more exciting to learn and work in.
- **Pressing Issues:** For the industry overall, there are a lot of new regulations to navigate. From my perspective, one of the biggest challenges is still the workforce shortage and introducing these careers as viable paths.
- **Championing HVACR:** It's important to stay current with industry news. Having a community to share knowledge and help each other grow makes learning faster and more enjoyable.



**What are you most looking forward to at this year's AHR Expo in Las Vegas?**

I'm excited to see **new tools, equipment, and tech demos, and to connect with other people** in the trades. Staying up to date and relevant keeps the excitement alive!



**From the**

**PAVILLION**



**Pat Finley**  
Commercial Kitchen  
Chronicles

 [commercial\\_kitchen\\_chronicles](#)



What will be some important discussion topics this year?

- Where are people are finding techs?
- Why are people making the jump to go out on their own?
- What have been their struggles and successes of building something for themselves?

## In a Nutshell

- **Major Shifts:** Customer spending habits have changed dramatically. They're wanting more defined scopes of work and cost of repair vs replacement.
- **Pressing Issues:** Technician development all around. How do we find and train your next great technician?
- **Opportunities Ahead:** A lot of growth. Small private start-ups are gaining big customers and fast.
- **Big Impact Innovations:** Press technology, new meters and other diagnostic tools.
- **Challenges Ahead:** Keeping up with changes in regulations and building out techs.

## Hot Topics

- R290
- Availability of products
- Technician shortages and development
- A3s
- Foodservice/refrigeration trends
- Workforce Development



**Tersh Blisset & Josh Crouch**  
Service Business  
Mastery

 [@servicebusinessmasterypodcast](#)

Service Business Mastery podcast averages  
 **160,000+** downloads each month

We are regularly **ranked #1** in home service podcasts & HVAC podcasts and also in the **top 100** of all management podcasts in the world

## In a Nutshell

- **Major Shifts:** AI is moving at lightning speed and things are updating on a daily basis versus weekly or monthly.
- **Pressing Issues:** A2L & tariffs driving up the cost of products.
- **Opportunities Ahead:** Professionals becoming extremely efficient with their time and managing people/job costs.
- **Big Impact Innovations:** AI voice
- **Challenges Ahead:** Having home owners use programs such as ChatGPT to downplay the importance of trained and qualified techs.
- **Looking Ahead to Vegas:** I'm looking forward to seeing all of my friends I haven't seen in person all year, and meeting new ones.



What will be some important discussion topics this year?

**Everything AI related** such as AI note takers that record conversations on the show floor and then produce a list of notes and checklist items.



**Rhydun Atzenhoffer**  
HVAC R&D

 @hvac.rnd

“ The HVACR industry is in one of its most pivotal transition periods we’ve seen in years, and that’s been the heartbeat of the conversations on the HVAC R&D Podcast lately.

Contractors, manufacturers, and distributors are all **navigating the triple challenge of new refrigerants, smarter more efficient and more connected equipment, and a workforce that’s being reshaped by both technology and necessity.**

What excites me most heading into 2026 is seeing the shift from just ‘meeting regulations’ to actually embracing innovation — people aren’t just talking about the A2L refrigerant change, IAQ, and efficiency anymore, they’re figuring out how to sell it, install it, and maintain it better.

There is also a **real uptick in the energy around collaboration and education** as we continue to see the workforce start to transition to the next generation.

All of these things are exactly what I love to highlight on the show — hearing real stories from the field about how these changes are impacting everyday work.”

## What I’m Watching

The HVAC R&D #TradeCrew is made up of the boots-on-the-roof-and-in-the-crawlspace crowd—contractors, service techs, and the distribution and manufacturer reps who keep them supplied—and right now three topics dominate every conversation:

- **A2L Refrigerant Readiness** – not just the regulations, but the real-world training and tools techs need to handle the transition. It is a mix of lots of anxiety but also excitement from pros who see it as a chance to set themselves apart.
- **Smarter, Connected Equipment** – from inverter-driven heat pumps to advanced zoning and IAQ controls as well as innovative home automation, contractors are figuring out how to sell comfort as a service, not just a box swap.
- **The Workforce Gap** – everyone’s talking about how to attract and train the next generation, and I’ve had great conversations with people who are actually making it happen, from grassroots trade schools to creative apprenticeship programs and more.

These aren’t just industry buzzwords for listeners—they’re daily challenges, and on the HVAC R&D Podcast I try to cut through the marketing hype and talk about what’s working, or not working in the field.



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

Across the industry, the most pressing issue is still the **tail end of the A2L transition.** We’re mostly past the panic phase, but we’re not fully settled. All manufacturers have now switched to R32 or R454B, but we’re still seeing gaps where updated products are finishing their roll out, and availability can be hit or miss depending on the region. Contractors are becoming more willing and ready to dive in, but they’re frustrated when the gear isn’t on the shelf or in the warehouse yet.

In my sector — working directly with contractors and distributors — that **supply stability is the hot topic.** Everyone’s just trying to plan jobs with confidence again. The good news is that compared to a year ago or six months ago, those shortages are easing, and you can feel the relief as more R32 and R454B equipment and refrigerant actually lands in warehouses.

Beyond refrigerants, the other big issue in **constant discussion on the podcast is workforce development.** Technology is changing faster than the talent pool is growing, and if we don’t keep bringing new people in—and training them right—it won’t matter how great the equipment is. That’s why I spend so much time talking about it on HVAC R&D.



**Rhydon Atzenhoffer**  
HVAC R&D



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

Since the last AHR Expo, the biggest shift I am seeing — and talking about a lot on the HVAC R&D Podcast — is that the **industry's finally moving from hesitation and change to back to hands-on.**

The A2L transition isn't just a talking point anymore; techs and contractors are buying the tools, getting the training, and figuring it out. Early adopters are already using it as a sales and service advantage, and manufacturers are stepping up with better support to calm the nerves out there.

On the heat pump side, the **cold-climate challenge is getting crushed one inverter at a time.** Dual-fuel and full inverter systems are changing the conversation from “will it work?” to “why didn't we switch sooner?” Customers want comfort and efficiency, and contractors are leaning in because it sells.

Bottom line, the **industry's not just reacting anymore — it's adapting fast,** and that's a big change from where we were a year ago when there was so much tension in the air about what was about to change.



**What are the hot or trending topics being discussed currently?**

- **Supply Chain Updates** – The good news is the equipment and refrigerant backlogs that plagued us for the majority of 2025 is finally easing up. We're seeing fewer holes in product lines, and techs and contractors are telling us they're able to plan jobs more confidently again as primarily R454B is also becoming more readily available again. It's not perfect, but the scramble-for-refrigerant seems to be winding down.
- **New Tech & Other: Full Inverter Technology** – The acceptance of inverter-driven systems — especially in heat pumps and dual-fuel applications — is picking up steam. Contractors who once hesitated are now leaning into it because customers are asking for comfort, quiet operation, and better energy savings, not just the cheapest system on the block. On the show, I've had great discussions about how educating homeowners on these benefits is becoming a sales edge, not just a tech upgrade and contractors that are embracing this technology are having amazing results.
- **Workforce Development** – One of the biggest priorities for the show is helping to educate and empower the next generation. The future of the industry depends on how well we attract and train the next generation — not just in contracting, but in distribution and manufacturing too. I use the podcast to highlight success stories, new training programs, and the people who are out there proving you can build an amazing career in HVAC.

At the end of the day, the #TradeCrew wants to hear real solutions to today's challenges, and those three areas — smoother supply chains, better tech adoption, and growing the workforce — are where I'm seeing the most hope heading into 2026.



**What are some opportunities you think will have an impact on the HVACR community?**

One of the biggest opportunities in the coming year is the **growing ability for connectivity across trades.** Homeowners no longer think in silos — they want HVAC, plumbing, electrical, and even IAQ to work together, and the contractors who can deliver that are going to win bigger chunks of business.

A great example is the newly released HG Home Guardian system. It's a universal monitoring system that lets contractors keep tabs on multiple systems under one roof. For companies already doing more than one trade, it's a way to lock in more of a customer's trust — and more of their business — by offering smart technology that makes their home run smoother and more efficiently.

The opportunity is simple: **the contractors who embrace this kind of technology aren't just installing equipment anymore — they're becoming the homeowner's go-to comfort and performance partner.** That's where the growth is.



Rhydon  
Atzenhoffer  
HVAC R&D



What are some challenges the industry is facing?

The biggest challenge staring us in the face is still the workforce. **We can have the smartest equipment and cleanest installs in the world, but if we can't get enough skilled people in the field — or trained fast enough — we're going to struggle to keep up with demand.** That's why I push workforce development so hard on the HVAC R&D Podcast; it's the long game, and it's the only way forward. AI isn't replacing the physical human body that is doing HVAC.

The other challenge the industry is watching closely is **continued tariff tensions in the U.S.** Even as A2L equipment availability improves, tariffs could shift pricing and disrupt the supply chain in ways we're not fully prepared for. If certain components or raw materials get caught in the crossfire, contractors and then homeowners could feel that ripple in both cost and lead times all over again.

Bottom line, HVAC technology is moving fast, but workforce limitations and global trade politics could decide how smooth — or rocky — 2026 really is.



What innovations, in your opinion, have the potential to make the biggest impact?

Surprise, surprise — HVAC R&D is talking about inverter and variable-speed heat pumps again, but for good reason. The technology keeps proving itself, and the impact is only getting bigger. **Full inverter systems are changing how contractors sell comfort, especially in cold climates where heat pumps used to be a tough pitch.** Pair that with high efficient multi-stage and modulating furnaces in dual-fuel applications, and you've got a serious game-changer for efficiency and year-round performance.

The real innovation isn't just in the hardware — it's in **how contractors are starting to use it to sell comfort as a service instead of just replacing equipment.** That shift in mindset is going to separate the pros who thrive in 2026 from the ones still stuck quoting by tonnage alone.

## Important Discussions from the Mic

Right now on the HVAC R&D Podcast, three conversations keep coming up that tie directly to what people will be looking for at AHR:

- **A2L Transition & Tools** – Contractors are asking for real solutions for A2L service and installation changes. The hot topic is which recovery machines, leak detectors, and gauges are making the switch easier. I am also hearing a lot of interest in advanced brazing rigs and even more buzz around press-fitting technology that can speed up installs and reduce the risks tied to working with new refrigerants.
- **Inverter & Variable-Speed Adoption** – I continue to be talking a lot about how to sell comfort, not just boxes. Contractors want partners who can help them explain inverter benefits to homeowners, so expect a lot of traffic around full inverter heat pump displays, dual-fuel solutions, and new zoning products specifically designed to work with inverter technology.
- **Workforce Development & Training** – This is huge for me. Listeners and my everyday customers are asking about partnerships with manufacturers and training programs that don't just teach techs the product but actually help bring new people into the trade. We're also seeing growing demand for self-education options — training apps and mobile-friendly platforms that let techs learn on their own time, right from their truck or living room at a very affordable price point.

At the end of the day, the questions we're hearing aren't theoretical — they're from guys and gals trying to make it work every day. The AHR floor is where they'll be hunting for the tools, partners, and training that give them a real edge.



**Rhydon**  
**Atzenhoffer**  
HVAC R&D

## My Vegas Agenda

I always tell people to **stay tuned to the HVAC R&D social channels** for updates; if something pops up, that's where you'll hear about it first.

One thing I do have on the calendar is **attending the 2026 HVAC Tactical Awards** on Sunday night before the AHR Expo doors open Monday morning. It's one of my favorite events of the year because it celebrates the people in the trenches of this trade and we get to see Blue Collar Go Black Tie.



**What are you most looking forward to at this year's AHR Expo in Las Vegas?**

The same thing I look forward to every year — **getting to see all of my friends and the members of the HVAC R&D #TradeCrew from all over the world at the largest HVACR show on the planet.** There's nothing better in this industry than being part of a community that makes the trade as great as it is, and AHR is where that community comes to life, from Sunday night at the Tactical Awards to Wednesday with the Workforce Development tours, Las Vegas will be the home of HVAC for four fantastic days in February.

And hey, it's Vegas, baby — you know I'll sneak off to the craps table with some of the #TradeCrew at some point for a few rolls of the dice. But at the end of the day, it's all about connecting, swapping stories, and learning from the people who are moving this industry forward.

## HVAC R&D Updates

Since launching in late 2020, the HVAC R&D Podcast has been one of the greatest adventures of my life. In the last five years, I've made more friends — family, really — through this trade than I did in the first 33 years of my life. That's what makes this show and the #TradeCrew so special: **it's a place where anyone in HVAC can sit down at a mic, tell their story, and instantly be embraced by an audience that supports them like one of their own.**

At the end of the day, the most important thing to me is seeing my friends — and their businesses and families — be successful. If HVAC R&D can play even a small role in helping make a fellow #TradeCrew member's life better, that's the greatest gift this podcast could ever give.

Being nominated as one of the three finalists for HVAC Tactical Podcast of the Year in both 2024 and 2025 is also already more than I ever dreamed this show would achieve. If 2026 is the year I take the top spot then well third times the charm and if you're going to win, is there a better place to do it than Vegas? And if I don't make the cut, then I'll stand and praise whichever of my friend's shows takes the honor and I'll be back at it for 2027.



**Eric Aune & Andy Mickelson**  
Make Trades Great Again

 @mechanicalhub

“ The HVACR industry is experiencing a wave of innovation — from heat pumps to IoT — and AHR Expo 2026 will be the premier destination to discover the latest technologies and solutions shaping the future of the trade.”

## What We're Watching

We have been talking about how to stay on top of the trending equipment and technologies without sacrificing customer satisfaction.



The MTGA podcast has **350+** episodes worth of conversation

between small business owners sharing success & failure in the trades.

## In a Nutshell

- **Major Shifts:** The energy industry has experienced a surge in customers seeking to capitalize on federal energy credits and rebates due to changes in these incentives.
- **Pressing Issues:** In the residential sector, the most pressing issue our customers face is rising costs of installation and maintenance.
- **Opportunities Ahead:** If a company can find confidence in niche markets while maintaining diversity, it can overcome the threat of recession.
- **Big Impact Innovations:** Work force development, training and retention.
- **Challenges Ahead:** The workforce will continue to pose a challenge in the coming years, requiring innovation and efficiency in all aspects of installation and maintenance.
- **Looking Ahead to Vegas:** Continued networking and exploration of the industry.



What are the hot or trending topics being discussed currently?

The HVACR industry's **supply chain is experiencing a roller coaster of ups and downs due to various challenges, including tariffs, refrigerant changes, and industry shifts.** To address these obstacles, suppliers, contractors, and end users are increasingly turning to Artificial Intelligence to meet their needs.



**Trevor Matthews**  
Refrigeration Mentor

 @refrigerationmentor

“ The industry’s changing fast — faster than I’ve ever seen in my career. CO<sub>2</sub> systems are no longer a specialty — they’re becoming the standard in commercial and industrial refrigeration. A2Ls are rolling out more aggressively, and that’s forcing everyone to rethink safety, training, and how we approach refrigerant transitions.

**What I hear every day from techs, trainers, and contractors is the same: we need to step up our game.** AI is becoming a tool we can’t ignore — whether it’s helping with diagnostics, flagging system issues early, or supporting newer techs in the field. But AI isn’t replacing people. It’s enhancing them. And to make that work, we need solid training — real training that builds confidence, not just theory.

One of the biggest challenges we face is attracting new people to this trade. But the opportunity is there. **Young people want tech-driven, meaningful careers.** And if we can show them how refrigeration is evolving — with smart systems, sustainability, automation, and real problem-solving — we can get them excited about joining this industry. Training and mentorship are going to be the foundation of that. It’s our job to build it.”

## What I’m Watching

- AI Integration
- CO<sub>2</sub> Systems Expertise
- Hands-On Technical Deep Dives
- Soft Skills & Tech Culture
- Industry Attraction & Mentorship

## Customer-Driven Topics

- AI + Controls
- Decarbonization
- A2Ls/A3s
- Workforce Development
- Regulation Updates
- Health Considerations



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

Since the February 2025 AHR Expo, **the refrigeration sector has experienced pivotal changes driven by the transition to low-GWP refrigerants and the increasing pressure for energy-efficient, climate-responsible systems.** The adoption of A2L refrigerants like R-454B has accelerated across commercial and industrial applications, with safety training and proper handling becoming urgent priorities due to their mildly flammable characteristics. Retail and supermarket operators are actively preparing for regulatory shifts, with many transitioning from legacy HFC systems to natural refrigerants like CO<sub>2</sub> and hydrocarbons, supported by updated component designs and safety protocols. There’s also a notable surge in hybrid system designs that balance reliability, capacity, and efficiency — highlighting a shift toward systems that are both regulatory-compliant and operationally flexible.

Another major transformation in refrigeration is the **rapid integration of smart controls, digital diagnostics, and connected service tools.** IoT-enabled controllers, cloud-based monitoring platforms, and AI-enhanced diagnostics are now central to system design and maintenance. These technologies allow service teams to reduce downtime, anticipate component failures, and optimize energy usage in real time. At the Expo, manufacturers emphasized controller innovations for CO<sub>2</sub> booster and cascade systems, showcasing features like predictive leak detection and adaptive defrost strategies. There’s also a growing emphasis on technician upskilling, with training in controls, networking, and data interpretation now essential for modern refrigeration service roles. This evolution reflects the industry’s broader shift from mechanical troubleshooting to data-driven, remote-capable, and performance-optimized refrigeration systems.



**Trevor  
Matthews**  
Refrigeration  
Mentor



### What are some challenges the industry is facing?

The HVACR industry is facing several near-term challenges, with the most pressing being the **rapid transition to low-GWP refrigerants like A2Ls and natural options such as CO<sub>2</sub> and R-290** — each requiring new safety protocols, technician training, and system redesigns. At the same time, the **ongoing labor shortage and skills gap** are being amplified by the increasing complexity of smart systems, digital controls, and AI-integrated platforms, making technician upskilling more critical than ever. **Electrification and decarbonization mandates** are also reshaping system design, but infrastructure limitations and high costs remain barriers to adoption. One area being watched closely is the rise of AI-powered tools for real-time field support, predictive maintenance, and automated commissioning, which could dramatically enhance troubleshooting, reduce service time, and redefine how training and mentoring are delivered on the job.



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

As of 2025, the HVACR industry faces several pressing challenges. A major issue is the **transition away from high-GWP refrigerants due to global and local regulations** like the Kigali Amendment and the AIM Act. This shift toward A2L refrigerants brings added complexity around system compatibility and technician safety. At the same time, there's a **growing labor shortage** as seasoned technicians retire and too few new workers enter the field with the skills needed for today's advanced systems.

**Technology adoption is also outpacing workforce readiness.** Many contractors are investing in smart thermostats, AI-driven diagnostics, and IoT devices, but struggle to find or train staff capable of using them effectively. Meanwhile, energy efficiency and electrification — particularly through heat pump adoption — are gaining momentum, yet face roadblocks like grid limitations, high upfront costs, and poor performance in certain climates.

In refrigeration, the **push toward CO<sub>2</sub> and hydrocarbon systems is accelerating**, especially in supermarkets and cold storage. However, these systems are complex to commission and maintain. CO<sub>2</sub> systems operate at high pressures, while hydrocarbons are flammable — both requiring more rigorous training and safety protocols. Technicians often lack the hands-on experience needed to service them confidently.

Control systems and digital integration pose another major challenge. Modern refrigeration systems rely on case controllers, remote monitoring, and variable-speed components that require not only HVACR knowledge but also IT and networking skills. Many **service issues now stem from misconfigurations, not mechanical faults, and training hasn't kept up with these demands.** At the same time, supply chain constraints and retrofit limitations make upgrading legacy systems expensive and slow. Energy management tools are becoming essential, but many teams still lack the digital know-how to use them effectively.



### What are some opportunities you think will have an impact on the HVACR community?

In the coming year, the HVACR and refrigeration industry stands to benefit greatly from **advancements in AI-driven controls, training, and mentoring.** AI-powered system controls are becoming more predictive and self-optimizing, allowing for smarter energy use, proactive fault detection, and reduced service calls. Simultaneously, AI-enabled training tools such as adaptive learning platforms offer on-demand, personalized learning experiences that accelerate technician development. Perhaps most transformative is the rise of AI mentors: intelligent agents that guide technicians in real-time during troubleshooting, offering support through questioning and feedback to build critical thinking skills rather than just giving answers. **These innovations not only enhance system reliability and performance but also offer scalable, cost-effective solutions** for workforce training and support making them a powerful opportunity for companies looking to improve service quality, reduce technician ramp-up time, and stay ahead in a rapidly evolving industry.



**Trevor  
Matthews**  
Refrigeration  
Mentor



**What are you most looking forward to at this year's AHR Expo in Las Vegas?**

At this year's AHR Expo, I'm particularly looking forward to **seeing a stronger presence from refrigeration-focused companies** especially those showcasing advancements in natural refrigerant technologies, CO<sub>2</sub> system innovations, and modular refrigeration solutions. It's exciting to witness how manufacturers are stepping up with more refined, service-friendly, and scalable options for low-GWP refrigeration, which aligns with the industry's transition toward sustainability and compliance. I'm also eager to **explore how these companies are integrating smart controls, remote diagnostics, and AI-enhanced support tools** into their product offerings, making life easier for technicians in the field. Beyond the technology, I'm looking forward to connecting with thought leaders, educators, and contractors who are actively shaping the future of refrigeration — both in technical innovation and workforce development. This year's show feels like a pivotal moment for refrigeration to take center stage within the broader HVACR landscape.



**What innovations, in your opinion, have the potential to make the biggest impact?**

One of the most impactful innovations in the HVACR industry right now is the **integration of AI-powered controls and diagnostics into refrigeration and HVAC systems**. These technologies enable real-time system optimization, predictive maintenance, and automated fault detection, significantly reducing downtime, energy waste, and emergency service calls. Alongside this, digital twin technology which allows technicians to simulate and test system performance virtually is transforming both system design and technician training. Another high-impact innovation is the **development of modular, low-charge natural refrigerant systems like CO<sub>2</sub> and hydrocarbon units**, which make sustainable refrigeration more scalable and accessible for smaller facilities. In the training space, AI-driven mentorship platforms and adaptive learning systems are making it possible to deliver personalized, hands-on learning at scale helping bridge the skills gap faster and more effectively than traditional methods.

## Important Discussions from the Mic

On the Refrigeration Mentor Podcast, current discussions are **focusing on the industry's transition to natural refrigerants such as CO<sub>2</sub> and hydrocarbons, with an emphasis on equipping technicians to navigate the associated safety, operational, and servicing complexities**. Guests are providing valuable insights drawn from field experience, including best practices for high-pressure system management, oil control, and commissioning processes — topics that closely align with the technologies and solutions being presented on the AHR Expo show floor. Additionally, the podcast **highlights the growing importance of technician development, particularly through hands-on education, simulation-based training, and emerging AI-driven mentorship tools** designed to address the industry's persistent skills gap. These conversations reflect critical challenges and innovations shaping the future of refrigeration and will be highly relevant to the key themes showcased at the Expo.

## Facts & Figures

As of 2024, North American adoption of transcritical CO<sub>2</sub> refrigeration systems

**↑45%** with approximately

**4,970**

commercial and industrial sites now operating on R744.

(Source)



**Trevor  
Matthews**  
Refrigeration  
Mentor

## Refrigeration Mentor Updates

The Refrigeration Mentor Podcast was created to be a resource where technicians, contractors, and industry leaders can come together to learn, share, and grow. **Our mission is to make refrigeration knowledge more accessible and practical — especially in areas like CO<sub>2</sub> systems, compressor troubleshooting, electrical diagnostics, and technician development.** We bring on real-world experts, trainers, OEM partners, and frontline techs to have open conversations about what's actually happening in the field.

Since the last AHR Expo, **we've seen significant growth in both our listener base and industry influence.** Downloads have steadily increased month over month, with a global audience tuning in from 68 countries. **We've expanded our podcast content** to cover new and emerging topics like A2L refrigerants, AI-powered diagnostics, and advanced CO<sub>2</sub> system design.

We've also launched several themed series — such as CO<sub>2</sub> Experts, Compressor Deep Dives, and Design Fundamentals — to help techs go beyond surface-level learning and into more specialized, career-boosting knowledge. Our guests have ranged from apprentices just starting out to engineers and business leaders shaping the future of HVACR. **The show has become a trusted voice in technician education and a powerful platform to elevate conversations that matter to the refrigeration community.**



**Gil Cavey**  
HVAC Uncensored

 @hvacuncensored

## What I'm Watching

I would say that the **workplace environment and company culture** have been significant factors. Next, I would mention **new technology** in HVAC, with some embracing it while others are less receptive.

## Customer-driven topics

Shifts across the industry **the younger generation is huge on PTO** than generations before. I see it more and more when hiring new younger techs. Also on the podcast when younger techs come on. Not just about what the pay rate is anymore but PTO for sure.

## Important Discussions from the Mic

**Mental Health in the trades** is a big one that I have covered and lived through, **new tech being used correctly** or not being used at all because of people being scared or ignorant to it, and finally **continuing to attract the younger generation** to the trades with proper resources and training to make their impact on the industry.



**What are you most looking forward to at this year's AHR Expo in Las Vegas?**

**Everything, to be honest.** Seeing all the new stuff, from equipment to tools. Seeing friends who share the same passion and making new friends in the process. I love seeing fans or supporters live in person, even after a decade of podcasting. I love meeting them as much as they do meeting me.

## In a Nutshell

- **Pressing Issues:** The USA needs to catch up with the rest of the world when it comes to regulations. The fact that only 18 out of 50 states require a license to do HVAC work is concerning. We are global leaders in so many industries. I wish we could be more of a pioneer in HVACR, rather than being reactive and falling in line.
- **Opportunities Ahead:** The opportunities are endless, I can't wait to see the new stuff at AHR. I am really excited to see how AI can transform our industry and help with a lot of pain points in the industry.
- **Big Impact Innovations:** Right now, AI for sure.



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

Those decisions get made by the government, and supply chains can't catch up. In the end, the HVAC Tech / Company is the one having to deal with it. **The summer of '25 started in a panic for most business owners coping with R454B.** It was something that shouldn't have been an issue to begin with, with 2 years' notice about the changes happening. We spent a lot of money and wasted valuable resources trying to adapt, all in an effort to avoid missing out on the busiest season. It was beyond frustrating locally and around the US.



**What are some challenges the industry is facing?**

As long as the economy keeps growing, consumers will have the money to upgrade HVAC and plumbing systems. **Manufacturing companies should not use tariffs as an excuse to raise costs that are then passed on to consumers.** Being a small business owner is scary, and we have to find ways to continue to provide great services and value to our customers while still being on the cutting edge of tech.

## HVAC Uncensored Updates

My podcast, HVAC Uncensored, **broke 10 million downloads in July.** I am extremely grateful that I have been able to podcast for so long and meet so many amazing people, whom I now call close friends. Also, to see people that I helped start a podcast being successful. I truly love every minute of it.



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