



Shaping Tomorrow's Built Environment Today

MINUTES (DRAFT) REF-CPCC February 1, 2026 – Winter Meeting

These minutes have not been approved and are not the official, approved record until approved by this committee

MEMBERS PRESENT:

Don Brandt, *Chair*
Bruce Nelson, *Vice-Chair*
Noor Alam
Andrew Beall
Petros Dalavouras
Martin Dierykx, *BOD Ex-Officio*
Stefan Elbel
Dustin Lilya
Cesar Lim
Bruce Lindsay
Andrew Pearson, *IoR Liaison*
Gary Schriff, *IIAR Liaison*
Doug Scott, *Consultant*
Harshal Surange
Gratiela Tarlea
Xudong Wang, *AHRI Liaison*
Danielle Wright, *NASRC Liaison*
Shitong Zha
Davide Ziviani

MEMBERS NOT PRESENT:

Devin Abellon, *Coord. Officer*
Yosr Allouche, *Liaison*
Jeffrey Greenwald, *Liaison*

ASHRAE STAFF:

Donna Daniel, *AMR*
Steve Hammerling, *MORTS*
Heather Pierce, *TSE*

GUESTS:

Roberto Aguilo
Ryo Akasaka
Hamid Azarnoush
Wayne Borrowman
Rafael Castillo
Ignacio Chaparro
Steve Comstock
James Curlin
Aaron Daly
Stephen Gill
Danny Halel
Sugun Tej Inampudi
Tatsuro Kobayashi
Taylor Lund
Jim MacLendon
Hardik Mehta
Tais Mitchell
Akio Miyara
Stan Nabozny
Lidia Perez
Ashu Potdar
Chris Seeton

Table of Contents

Motions	ii
Action Items	ii
List of Attachments.....	ii
List of Acronyms	iii
1.Call to Order & Welcome.....	1
2. Review of Agenda.	1
3. Approval of Minutes	1
4. Remarks from Chair	1
5. Liaison Reports	2
6. Subcommittee Reports.....	3
7. Remarks from BOD ExO and CO	4
8. New or Unfinished Business.....	4
9. Next Meetings.....	5
10. Adjournment.....	5

MOTIONS

No.	Motion	STATUS
1	That REF-CPCC approve the draft minutes from the January (January 8, 2026) meeting.	PASSED
2	That REF-CPCC approve Cold Chain PD for DRSC consideration.	PASSED

ACTION ITEMS – 2026 Winter Meeting

No.	Responsibility	Action Item	Status
1	Pearson	Send staff updated information to add to REF-CPCC website.	
2	Staff	Send Members information on Region XII webinar	

ACTION ITEMS – 2026 January Meeting

No.	Responsibility	Action Item	Status
1	Staff	Send the Cold Chain PD request form to all REF-CPCC members	Complete
2	Brandt	Email the editor of ASHRAE Journal to include the refrigeration trends survey results information in the next available issue.	Complete
3	REF-CPCC	Members interested in joining the Cold Chain PD committee should contact Nelson.	Ongoing

ACTION ITEMS – 2025 Annual Meeting

No.	Responsibility	Action Item	Status
2	Nelson	Review and submit a PD request for a PD on Cold Chain	Ongoing

LIST OF ATTACHMENTS

No.	Attachment
A	Report on 2025-26 MBOs
B	Standard PowerPoint Presentation for REF-CPCC liaisons to use at Meetings
C	IoR Liaison Presentation
D	IIAR Liaison Presentation
E	AHRI Liaison Presentation
F	NASRC Liaison Presentation

G	Trends in Refrigeration Report
H	Sustainability and Resiliency of the Cold Chain Position Document Request Form
I	ASHRAE Leadership Presentation
J	AASA Seminar Information
K	ISHRAE's REFCold India 2026 Information

LIST OF ACRONYMS

ASHRAE	American Society of Heating Refrigerating and Air-conditioning Engineers
AHRI	Air-Conditioning, Heating, and Refrigeration Institute
BOD	Board of Directors
CEBD	Center for Excellence in Building Decarbonization
CO	Coordinating Officer
DL	Distinguished Lecturer
DRSC	Document Review Subcommittee
EPA	Environmental Protection Agency
GCCA	Global Cold Chain Alliance
HFC	Hydrofluorocarbons
HVAC	Heating, Ventilating, and Air-Conditioning

IIAR	International Institute of Ammonia Refrigeration
IoR	Institute of Refrigeration
MBO	Management By Objectives
MOP	Manual of Procedures
MOU	Memoranda of Understanding
NASRC	North American Sustainable Refrigeration Council
PD	Position Document
REF-CPCC	Refrigeration Technology Committee for Comfort – Process – Cold Chain
RTC	Refrigeration Technology Committee
SY	Society Year
UNEP	United Nations Environmental Programme

1. **CALL TO ORDER**

Chair Don Brandt called the meeting to order at approximately 8:02 AM PST.

2. **WELCOME**

Members and guests in attendance introduced themselves.

3. **ASHRAE VALUE STATEMENT**

In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all.

Code of Ethics

Core Values

Diversity Statement

4. **Quorum Determination**

Quorum was confirmed with 14 of 14 voting members attending. Three non-voting members and three ASHRAE Staff were present as well.

5. **Review of Agenda**

Two Items were added under 8. New or Unfinished Business:

- A. Certified Refrigeration System Designer
- B. United Nations Environment Programme (UNEP) Safety Training Guide

6. **Minutes**

- (1) It was moved (Dalavouras) that the draft minutes from the January Virtual Meeting (January 8, 2026) be approved.

BACKGROUND: The minutes were distributed on January 27th.

MOTION 1 VOTE: 13-0-0-1 CNV – PASSED

7. **Chair's Report - Brandt**

A. **SY 25-26 MBOs -- Review**

An update on committee MBOs (**Attachment A**) will be reported to Operations Subcommittee of Tech Council on Tuesday morning.

MBO #2 to complete Memoranda of Understanding (MOU) with Global Cold Chain Alliance (GCCA) and North American Sustainable Refrigeration Council (NASRC) has been approved by ExCom and is on the BOD agenda for approval.

Co-Sponsoring a Tech Session (MBO #4) has been moved from the Winter Meeting to the Annual Meeting.

MBO #5 to develop a standard presentation for REF-CPCC liaisons to use for Meetings has been completed and distributed to liaisons (**Attachment B**).

B. Action Item Review

A summary of Action Items is shown on page 2.

Action Item #2 is reported as complete and the information will be published in the March issue of the ASHRAE Journal.

C. Motion to simplify REF-CPCC to RTC in the Manual of Procedures (MOP) and Reference Manual for SY2026-2027.

This motion was passed at REF-CPCC's Fall meeting in October to recommend that the name be simplified from "Refrigeration Technology Committee for Comfort - Process - Cold Chain" to "Refrigeration Technology Committee (RTC)." TechC passed the motion but changes have not been instituted in the ROB or any MOPs or Reference Manuals.

Brandt has emailed Abellon regarding these procedures and next steps. This decision has been moved to the BOD. They will decide whether it is appropriate for REF-CPCC to change names in the MOP and ROB.

5. Liaison Reports

A. Institute of Refrigeration (IoR) – Andrew Pearson

Pearson gave a presentation (**Attachment C**). The IoR is the UK's national representative body for ASHRAE. ASHRAE members have the option for joint membership with access to all online publications for a nominal add-on membership fee. IoR is developing a guide on Code of Practice for Changing Ambient based on weather data predictions and recommendations for design temperatures with an aim to publish in the spring of 2026. They are also working on a campaign for refrigerant leakage reduction including practical guidance and training.

B. International Institute of All-natural Refrigeration (IIAR) – Gary Schriff

IIAR President Gary Schriff gave a presentation (**Attachment D**). Their stated vision is to 'create a better world through safe and sustainable use of natural refrigerants and stated mission is 'to provide advocacy, education, and standards for the benefit of the global community in the safe and sustainable design, installation and operation of natural refrigerant systems'. IIAR has launched a new resources site that consolidates tools, information, and videos.

IIAR has a Memorandum of Understanding (MOU) with ASHRAE. Current joint projects include ASHRAE 1915-RP, *Refrigerated Facilities Doorway Infiltration Air Energy Reduction Research Project* and service on the *Refrigerants and Their Responsible Use* position document (PD) Committee. IIAR has an interest in being part of future REF-CPCC PD committees and support the ASHRAE Guide for Sustainable Refrigerated Facilities and Refrigeration Systems.

C. Air-Conditioning, Heating, and Refrigeration Institute (AHRI) – Xudong Wang

Wang gave a presentation (**Attachment E**). AHRI is a trade association with manufacturers of HVAC products for residential, commercial, and industrial applications as members. AHRI collaborates with ASHRAE on advocacy, standards, and research.

- D. North American Sustainable Refrigeration Council (NASRC) – Danielle Wright
Wright gave a presentation (**Attachment F**). NASRC is a nonprofit leading the transition to natural refrigerants by collaborating across the refrigeration industry. The American Innovation and Manufacturing (AIM) act of 2020 directs the Environmental Protection Agency (EPA) to phase down production and consumption of hydrofluorocarbons (HFCs) by 85% by 2036. She pointed out a gap in the funding of technicians in the industry and a lack of experience for manufacturers to have the ability to transition from HFCs. Because of this, they are hosting a Technical Training Program with summits for different experience levels throughout 2026.
- E. Trent Hunt
No formal report was presented. He noted the importance of ASHRAE's role in training technicians to help them understand how systems work in order to make them run more efficiently.

6. **Subcommittee Reports**

- A. Communication – Nelson, Dalavouras, Alam, Elbel, Wright, Zha
Nelson met with the subcommittee and they worked with Pearson to develop an article being published in the March issue of the ASHRAE Journal promoting the Milt Garland Refrigeration Award (MBO #1).
- B. Planning – Ziviani, Lilya, Beall, Surange, Tarlea, Lim, Lindsay
Nabozny has applied to be an ASHRAE distinguished lecturer (DL) with a Refrigeration Focus (MBO #6).
- C. H in Refrigeration Ad Hoc – Brandt, Lindsay, Zha, Alam
No report from this subcommittee.
- D. Trends in Refrigeration Ad Hoc – Beall, Wright, Nelson, Lilya, Dalavouras
The "Trends in Refrigeration" Report (**Attachment G**) is ready to be posted on the website with some reformatting to make it easier to see in a website format. They will work with Brandt to find an appropriate format before posting on the website. Wright notes there was good participation among subcommittee members to complete this report.
- E. Cold Chain PD Ad Hoc – Nelson, Surange, Alam
A request to develop a new ASHRAE PD on "*Sustainability and Resiliency of the Cold Chain*" has been developed. Nelson requests that any members interested in being a part of the PD development committee contact him directly at bruce.nelson@bvngineering.com. Names of interested parties will be submitted as part of a potential roster to be appointed by Tech Council. Dieryckx suggested this PD should address developing countries as an editorial change.

- (2) It was moved (Lim) and seconded (Alam) that REF-CPCC approve Cold Chain PD for DRSC consideration.

BACKGROUND: The PD proposal is shown in **Attachment H**.

MOTION 2 VOTE: 13-0-0-1 CNV - PASSED

- F. Refrigerants and their Responsible Use Position Document - Lilya

This PD was submitted for approval at the Winter Conference. The committee received some comments from Document Review Subcommittee (DRSC) that were mostly editorial in nature. Responses to comments are in progress and no further changes are warranted.

DRSC, Tech Council and the ASHRAE Board of Directors (BOD) will consider approval at the Winter Meeting.

7. **BOD/Tech Council Reports**

A. **BOD Ex-Officio – Dieryckx**

No formal report was given but Dieryckx presented the ASHRAE Leadership presentation (**Attachment I**).

Highlights for REF-CPCC include:

- Latest ASHRAE Strategic Plan at [ashrae.org/strategic plan](http://ashrae.org/strategic-plan)
- Membership dues will increase \$5 in the 2026-2027 SY
- Refrigerant Transition is a Hot Topic in Government Affairs
- CEBD developing research project on Refrigerant Emissions Management, Tracking, and Compliance
- The Future of ASHRAE Conferences Ad Hoc is charged to recommend a new overall Society conference strategy which specifically focuses on changes to the typical Annual Conference.
- Nominations for REF-CPCC due here by Feb. 13th.

B. **Coordinating Officer (CO) – Abellon**

No report from CO.

8. **New or Unfinished Business**

A. **Certified Refrigeration System Designer – Scott**

REF-CPCC is working with the Certification Committee to develop a certification for Refrigeration System Designers. REF-CPCC may help develop training materials and testing information. Some members noted concerns including, that this may be too broad and would include too much information for a single certification, the testing process will have to effectively test depth of knowledge where online resources are readily available, and whether or not REF-CPCC has the bandwidth to take on this project. The eventual work group may have to prioritize either the training materials or the test itself.

Scott volunteered to chair an ad hoc committee to explore further. Lim, Lindsay, and Zha volunteered and others interested should contact Scott.

B. **UNEP Safety Training Guide**

Steve Comstock with UNEP noted they are developing a Safety Training Guide. Surange and Alam have volunteered to help with this effort.

C. **CEBD Report – Wright, Nelson**

Wright reports that a project to develop Guide for the *Decarbonization of Grocery Stores Guide* is underway.

Nelson reported the development of a Refrigerant Emissions Management, Tracking, and Compliance tool that focuses on HVAC system leakage.

D. REF-CPCC Website – Pearson

Pearson notes that the REF-CPCC website contains outdated information on awards, including information regarding awards that are no longer active. Since the Honors & Awards committee was developed to manage award information, it appears that information on the website has not been updated accordingly. Members note that Pearson should send specific information on items he would like to see updated to staff to add to the website (**Action Item 1**).

E. Programs

Doug Reindl and Stan Nabozny are speaking in a program where they will be giving a 5-minute overview of REF-CPCC to be given at chapter meetings. Work is being conducted to clean up the presentation.

Region XII is conducting a webinar in late February. Staff to send detailed information on this to all committee members (**Action Item 2**).

F. REF conferences by other Organizations

- ASHRAE Associate Society Alliance (AASA) Seminar – Tarlea
The Seminar is titled “Global Perspectives/ Refrigerant Transition/ Refrigeration and Decarbonization with Study Cases in Developing Countries.” This is presented on February 2nd, 2026, from 10:00 to 11:00 AM PST. More information is included as **Attachment J**.
- ISHRAE’s REF Cold India 2026 Refrigeration & Cold Chain Exhibition
This will take place November 19-21, 2026, at the Agriculture College Ground, Pune (**Attachment K**).
- RAL is having CRC in Egypt
The ASHRAE Region-at-Large (RAL) Chapters Regional Conference is scheduled for October 1-5, 2026, hosted by the Cairo Chapter in Cairo, Egypt. More information will be distributed as it becomes available.

9. Next Meeting

- A. 2026 Spring Virtual Meeting – Staff will poll for best meeting date and time
- B. 2026 Annual Meeting – Sunday, 8:00 AM – 12:00 PM CST, June 28, 2026, Austin, TX

10. Adjournment

Meeting was adjourned at 11:18 AM PST.

MBO Submissions to Planning Committee
Last submission date: 2/2/2026

Generation date: 8/7/2025

Committee: Refrigeration Technology Committee for Comfort - Process - Cold Chain Committee

Chair: Brandt Donald L

Vice-chair: Nelson Bruce I

MBO #	Description	Metric	Completion % /Date	Financial Assist Req'd?	Staff Assist Req'd?	MBO Comments
		(how do we determine success?)				
1	Promote Milt Garland Refrigeration Award	Have three submissions	Jan 2026 100%	Yes	Yes	Communication Subcommittee 100% complete as of Winter Meeting An article is submitted for the March issue of the ASHRAE Journal to promote the award. Currently, there are 4 submissions.
2	Complete MOU s with GCCA and NASRC	Signed MOU s	May 2026 67%		Yes	Chair 67% complete, Approved at ExCom, BOD and signed on Sunday evening along with a detailed work plan
3	Host a happy hour in Las Vegas, Feb 2026 Meeting	Event Happens	Dec 2026 0%	Yes	Yes	Planning Subcommittee 0% complete, this has passed and has not been rescheduled
4	Co Sponsor a Tech Session in Las Vegas, Feb 2026 Meeting	Event Happens	August 2026		Yes	Committee This has been rescheduled to take place in Austin at the Annual Meeting
5	Develop a standard ppt for Refrigeration Committee Liaisons can use at the 2026 Winter and Annual meetings	PPT Completed	Dec 2026 100%		Yes	Committee 100% complete, a powerpoint was finished and circulated among REF-CPCC committee members
6	Add one DL with Refrigeration Focus	Added DL	June 2026 100%	Yes	Yes	Planning Subcommittee 100% complete, Stan Nabozny was added, pending approval

Refrigeration Committee CPCC ASHRAE 25 -26 Society Year

Your Name

Your email address

CPCC

- Comfort Cooling and Applications – Rest of ASHRAE
- Process Cooling and Applications – Low Temperature
- Cold Chain Cooling and Applications – Food Processing and Cold Storage with Transportation
- Heat Pumps to dual function on the systems

Membership

- 14 Voting Members, 3-year term
- 6 Nonvoting Members, Liaisons to Allied Refrigeration Societies
- One consultant
- Report to Technology Council
- 4 Sub committees

Goals

- Add one or more Distinguished Lecturers with Refrigeration focus
- Promote the Milt Garland Refrigeration Award with three subcategories
- Sponsor and present a tech session at the Austin Summer meeting
- Complete MOU's with: International Institute of All Natural Refrigeration, North American Sustainable Refrigeration Council and Global Cold Chain Alliance

Position Documents and Research

- Refrigerants and their Responsible Use
- Resiliency, Decarbonization, Energy, and Refrigerants is at the TPS stage
- RP – 1915 is infiltration in cold storage facilities in conjunction with GCCA
-

Challenges

- How do we get more 2 yr and 4 yr College Programs to focus on Refrigeration while continuing there current HVAC programs.
- Adding a focus on Heating with Heats Pumps while operating in Refrigeration Systems.

Future

- We meet at the Winter and Summer Meeting on Sunday mornings from 8AM to Noon.
- Thank you for allowing us time at your meeting

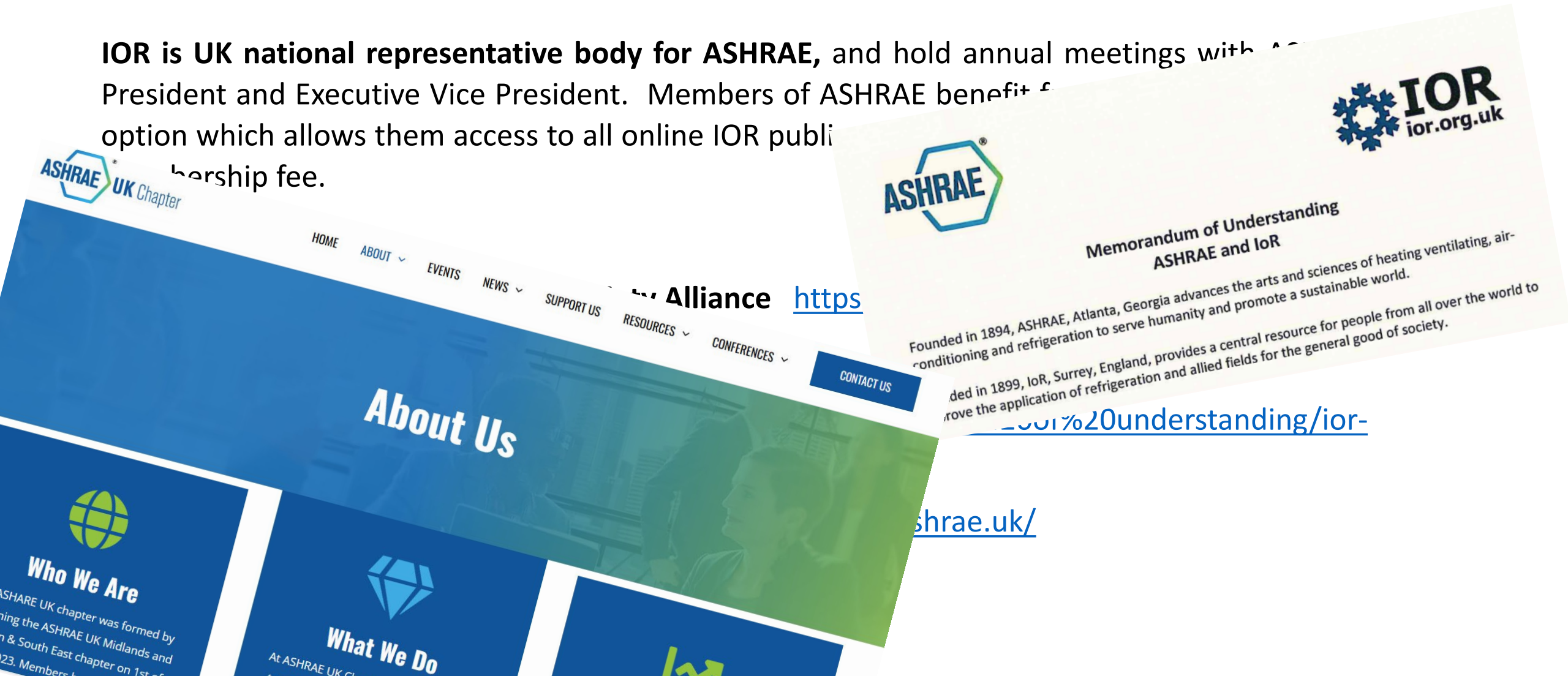
The Institute of Refrigeration

the UK's professional engineering body
for individuals, founded in 1899



Background and history

IOR is UK national representative body for ASHRAE, and hold annual meetings with ASHRAE President and Executive Vice President. Members of ASHRAE benefit from an option which allows them access to all online IOR public information for a small membership fee.



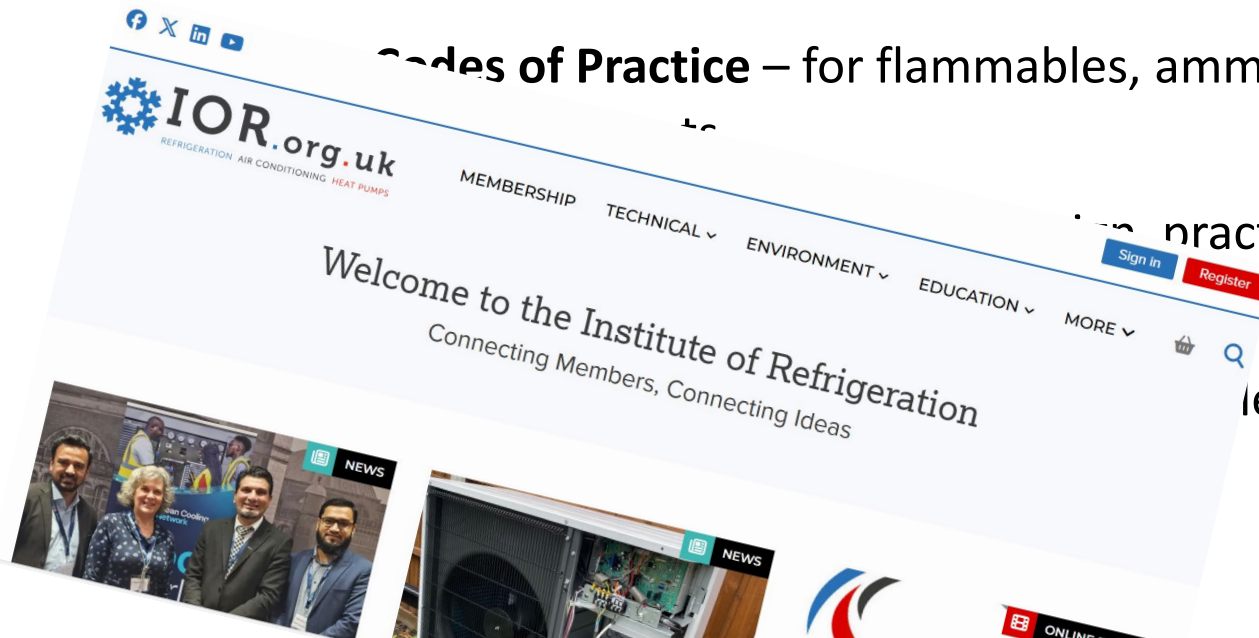
Upcoming technical matters of interest

- **New Code of Practice for Changing Ambient** – IOR is the lead publisher for this UK guide based on weather data predictions and risk recommendations for design temperatures. It will be published in spring 2026. It can be a template for other country's adaptation recommendations.
- **European and International Safety Standards** – IOR gives technical input through membership of national committees that review EN and ISO standards

Codes of Practice – for flammables, ammonia, carbon dioxide and non toxic non

practical guidance and training at

le to all from our website www.ior.org.uk



Other International Activity

- UK representative to the **International Institute of Refrigeration** (IIR IIF) on behalf of national government. This is similar to the USNC for IIR, hosted by ASHRAE
- IOR has previously hosted international **conferences** on themes: Retail Sustainability, Cold Chain, HFO refrigerant, Natural Working Fluids, Rankine Cycle, Changing Ambient.
- IOR has submitted a proposal to host the **18th IIR Gustav Lorentzen Conference on Natural Refrigerants** in Bristol, UK in August 2028 with the theme of “Future Proof Refrigeration”. Awaiting decision of IIR committee.
- Partner in the **REAL Alternatives** consortium of training partners promoting common standards for training in carbon dioxide, flammables and ammonia.
- Recognised by the **UK Engineering Council** to accredit members as chartered engineers.



Safe and Sustainable use of Natural Refrigerants

Gary Schrift – President
ASHRAE REF-CPCC Presentation
February 1, 2026 – ASHRAE Winter Meeting

Our Vision

**To create a better world
through the safe and
sustainable use of natural
refrigerants**

Our Mission

**To provide advocacy, education, and
standards for the benefit of the global
community in the safe and sustainable
design, installation and operation of
natural refrigerant systems**



**standards,
education,
advocacy**

SAFE AND SUSTAINABLE USE OF
NATURAL REFRIGERANTS





NRF

**NATURAL
REFRIGERATION
FOUNDATION**

Our Mission

**To Promote the safe and
sustainable use of natural
refrigerants through
Research, Education
Program Development and
Scholarships**

**education
research**

SAFE AND SUSTAINABLE USE OF
NATURAL REFRIGERANTS



2025 IIAR Initiative Highlights

Launched a New IIAR Resources Site

- Consolidated existing and added new Tools, Information & Videos



2025 IIAR Initiative Highlights

Natural Refrigeration Directory

A searchable listing of experts in the use of natural refrigerants including manufacturers, contractors, engineers, and end users can assist you in your cooling, refrigeration and heat-pump needs.



Search

All Contractor Education End Users Engineer & Consultant Manufacturer



Manufacturer

GUNTNER

Güntner is a world-leading company with over 90 years of leading engineering solutions in heating and cooling systems, offering a wide variety of air coolers, dry coolers.

✉ sales@guntnerus.com
🌐 <https://www.guntner-solutions.us/>

LEARN MORE



Contractor

Mr. Ammonia Refrigeration Inc

"Mr Ammonia Refrigeration Inc. has an outstanding reputation for complete customer service and project execution with special attention to every detail.

✉ sales@mrnh3.com
🌐 mrnh3.com

LEARN MORE



Manufacturer

CTI Gas Detection Specialists

CTI is a leading manufacturer of refrigerant gas detection equipment for industrial facilities. CTI specializes in Ammonia, Carbon Dioxide, and Propane.

✉ sales@ctigas.com

LEARN MORE

Natural Refrigeration Directory

- Find an Engineer/Consultant, Contractor, Manufacturer, End User, Educator applying or using Natural Refrigerants

2025 IIAR Initiative Highlights

Natural Refrigerants Training Programs

- Find the needed training on a NH3, CO2, HC, by location, training level, and training type

Natural Refrigerants Industry Training Programs

A searchable listing of industry wide training programs available for the use and application of natural refrigerants.

View All	Refrigerants ▼	Service Territory ▼	Training Level ▼	Training Type ▼	Search
----------	----------------	---------------------	------------------	-----------------	--------

AAA Refrigeration

REFRIGERANTS:
CO2, HC/Propane

SERVICE TERRITORY:
NJ, NY, CT, PA

TRAINING TYPE:
Classroom, Online, Hands-On

TRAINING CATEGORY:
Contractor – Provides Installation, Operations, and/or Maintenance Services
End User – Owner, Operator, or Technician
Specialty Services Provider – Association, Compliance Oversight, Other Services/Products

TRAINING LEVEL:
Beginner, Intermediate, Advanced

WEBSITE URL:
<https://www.aaarefrig.com/>

EMAIL:
PSavage@AAAREfrig.com

PHONE:
(718) 324-2231

ADDRESS:
1804 Nereid Ave. Bronx, NY 10466 USA

Accutherm Refrigeration Inc.

REFRIGERANTS:
CO2, HC/Propane

SERVICE TERRITORY:
Southern CA, AZ, NV

TRAINING TYPE:
Hands-On

TRAINING CATEGORY:
Contractor – Provides Installation, Operations, and/or Maintenance Services
End User – Owner, Operator, or Technician
Specialty Services Provider – Association, Compliance Oversight, Other Services/Products

TRAINING LEVEL:
Intermediate, Advanced

WEBSITE URL:
<http://accuthermrefrigeration.com>

EMAIL:
jrecker@accutherm-inc.com

PHONE:
(714) 248-7748

ADDRESS:
11264 Monarch St. Suite. A

2025 IIAR Initiative Highlights

WELCOME TO THE NATURAL REFRIGERATION CAREER CENTER



Are you ready to embark on an exciting career in the innovative field of natural refrigeration? Our platform is designed specifically for aspiring engineers like you, offering a comprehensive hub to explore **internship and entry level job opportunities** that align with your passion for sustainable cooling solutions.

WHY CHOOSE NATURAL REFRIGERATION?

Natural refrigeration technologies are at the forefront of the movement toward more environmentally friendly practices in the industry. By harnessing natural refrigerants and energy-efficient systems, you can play a vital role in combating climate change and promoting sustainability. As the demand for eco-friendly solutions grows, so do the career opportunities in this dynamic field.

START YOUR JOURNEY TODAY!

Dive into the world of natural refrigeration and take the first step toward a fulfilling career that makes a difference. Whether you're a recent graduate or a student seeking internship opportunities, the Natural Refrigeration Career Center is here to help you navigate your path in this essential industry.

Explore our listings, connect with industry leaders, and unlock a future filled with possibilities in natural refrigeration—where innovation meets sustainability!

INTERNSHIPS & ENTRY LEVEL EMPLOYMENT

This page is designed for those entering the Natural Refrigeration field. Any position that requires experience in the Natural Refrigeration field will not be found in the Career Center.

Natural Refrigeration Career Center

- Post your entry level or internship position in the Natural Refrigerants Industry
- Find you entry level or Internship position.

2025 IIAR Initiative Highlights

Refrigerant Evaluator Tool

View Refrigerant Assessment

R-717 (Ammonia)

Low Side Condition: 15F

High Side Condition: 120F

Component Makeup		
R-717	Natural	100%

Type	Natural	
Glide	0	0
PSIG	43.1	287
Boiling Point	-28 F	
Lubricants	MO, PAO	
Compression Ratio	6.66	
Lat. Heat of Vapor	557.05	454.34
Compatibility Issue	No Copper or its alloys	

Chillers (700 GWP)	IR<200lbs (300 GWP)	IR>200lbs (150 GWP)
Meet **	Meet **	Meet **
2025	2025	2025

SNAP APPROVALS		
The EPA uses the Significant New Alternatives Policy (SNAP) to approve refrigerants for specific use. Refer to the Rule or Notice below for details.		
CS Warehouse	Ice Skating Rink	Industrial Process AC
YES	YES	NO
Comm. Ice Maker	Refrig. Transport	Retail Food Refrig.
YES	NO	NO

Industrial Refrigeration	Positive Displ. Chiller	Very Low Temp Refrig.	Centrifugal Chillers
YES	YES	YES	NO
Non-Mech Heat Trnsfr	Non-Res. Dehumid.	Res. and Lt. Comm. AC	Self Cont Ice Maker
YES	NO	NO	NO

** Determination made based upon GWP and how it relates to the EPA Rule of 10/6/23 authorized under The American Innovation & Manufacturing (AIM) Act enacted on 12/27/20.

*** Classifications determined in accordance with the ASHRAE 34 Standard.

**** BHP/TR used for comparative purposes. It has been estimated using a typical industry mid-sized screw compressors (non-economized and without subcooling).

View Refrigerant Comparison

Refrigerant Temp: 30F

R-32

R-600a (Isobutane)

R-22

Chemical Name	difluoromethane		2-methylpropane (Isobutane)		clorodifluoromethane	
BHP/TR @ 70CT 95CT 120CT	109.7%	115.3%	126.9%	147.9%	123.1%	116.7%
GWP 100/ODP	675	0		3	0	
Flammability ***	Yes		Yes		No	
Toxicity ***	Lower		Lower		Lower	
Safety Class ***	A2L		A3		A1	
RCL ***	36,000 ppm		4,000 ppm		59,000 ppm	
LFL ***	144,000 ppm		16,000 ppm			
Glide	0		0		0	
Lubricants	POE		MO, AB, POE		MO, AB	
Type	HFC		Natural		HCFC	

[*Use at your own risk. Follow local AHJ compliance, and EPA general regulations: SNAP link here](#)

** Determination made based upon GWP and how it relates to the EPA Rule of 10/6/23 authorized under The American Innovation & Manufacturing (AIM) Act enacted on 12/27/20.

*** Classifications determined in accordance with the ASHRAE 34 Standard.

2025 IIAR Initiative Highlights

Ammonia Global Standards

Ammonia Refrigeration Global Standards and Regulations

Offering a one-stop location to learn which standards and regulations apply for ammonia refrigeration in countries throughout the world.

Countries List

- Beijing, PR China
- Argentina
- Chile
- Colombia
- Costa Rica
- Ecuador
- Peru
- France
- Germany
- Italy
- Spain
- India
- Australia
- USA
- United Kingdom



Germany

Germany is recognized as a leader in refrigeration technology and safety practices. The country's regulatory framework is among the most rigorous in Europe, reflecting both EU directives and strong national laws. Ammonia is widely applied in industrial systems, backed by advanced training programs and strict compliance requirements. Germany also drives innovation in sustainable refrigeration, making it a global reference point for natural refrigerant use.



Germany	
Equipment Design	+
Existing systems	+
Installation of equipment	+
Machinery Room Design	+
New installation	+
Piping and valves	+
System Design (General)	+
System Safety (Overall)	+

2025 IIAR Initiative Highlights

Informational Papers & Videos on Natural Refrigerants

A collection of industry reports, white papers, fact sheets, and videos on Natural Refrigerants.

All

Papers

Videos

Search

PAPERS



Environmental and Health Risks of Synthetic PFAS Refrigerants

Modern HFO (hydrofluoroolefin) refrigerants are a growing contributor of trifluoroacetic acid (TFA), a per- and polyfluoroalkyl substance. These substances, otherwise known as PFAS 'forever chemicals' introduce long-term PFAS pollution risks. This white paper examines the growing global concern over the role HFO refrigerants and their TFA byproducts play in the impending PFAS pollution disaster.

[VIEW](#)

PAPERS



Applicable SNAP Refrigerant Approval Notices and Rules

The EPA's program for approving the safe use of refrigerants in specific industry applications is guided by Significant New Alternatives Policy (SNAP). Under this program, the EPA issues Rules or Notices to identify acceptable and unacceptable uses of evaluated refrigerants. These acceptances are limited to specific applications for each refrigerant.

[VIEW](#)

VIDEOS



IIAR Hydrocarbons

This short animated video explains how isobutane, a natural refrigerant, is used in common household appliances—highlighting its sustainability, safety, and energy efficiency as a modern cooling solution.

[VIEW](#)

VIDEOS



Decarbonization

This animated video explores different types and examples of carbon emissions reduction programs, showing how transitioning to natural refrigerants can play a key role in achieving sustainability goals.

[VIEW](#)

VIDEOS



CO2 Refrigerant

This short video highlights the advantages of CO₂ as a natural refrigerant—its efficiency, safety, and sustainability—and showcases its common use in grocery store refrigeration systems.

[VIEW](#)

VIDEOS



Ammonia Refrigerant

This short video explores how ammonia refrigeration drives the global cold chain and highlights ammonia's broader role as a sustainable solution for food preservation, fertilizer production, and emerging clean energy applications.

[VIEW](#)

VIDEOS



History of Natural Refrigerant

This animated video explores the history of refrigerants—from early natural refrigerants to the rise of CFCs, HFCs, and HFOs—and how the industry is coming full circle back to natural refrigerants as the sustainable solution for the future.

[VIEW](#)

VIDEOS



NRF Founders Scholarships

Discover how the Natural Refrigeration Foundation is empowering the next generation of sustainable cooling professionals through its scholarship program!

[VIEW](#)

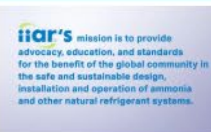
VIDEOS



Experts on the Benefits of Natural Refrigerants

Industry experts discuss the practical, performance, safety, and environmental advantages of natural refrigerants such as ammonia, carbon dioxide, and propane in modern refrigeration systems.

VIDEOS



IIAR: Advancing Natural Refrigeration Worldwide

This video highlights IIAR's leadership in advancing natural refrigeration through standards development, promotion of low-GWP refrigerants, advocacy, industry collaboration, and its influential annual conference.

PAPERS



State Of The Industry

The IIAR State of the Industry report provides an in-depth overview of current trends, challenges, and advancements shaping the natural refrigeration industry worldwide.

PAPERS



Ammonia Refrigerant Just the Facts

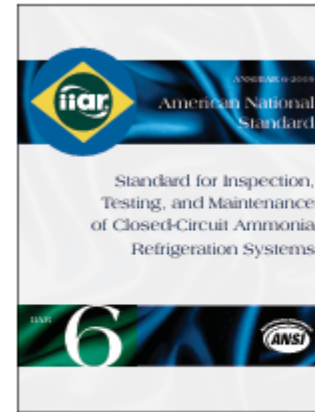
This infographic presents key facts about ammonia as a natural refrigerant, highlighting its energy efficiency, low environmental impact, ease of maintenance, and long history of safe, effective use.

2025 IIAR Initiative Highlights

Updated IIAR Publications

ANSI/IIAR Standard 5-2025 American National Standard for the Startup of Closed-Circuit Ammonia Refrigeration Systems

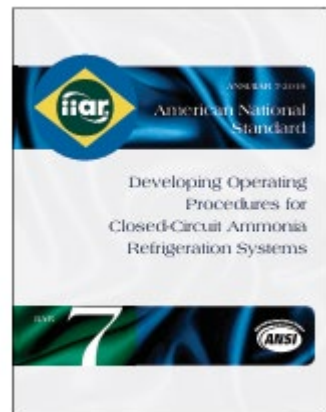
ANSI/IIAR 5 specifies basic minimum criteria and procedures for the safe start-up of completed closed-circuit mechanical refrigerating systems utilizing ammonia as the refrigerant along with additions and modifications made to such systems.



ANSI/IIAR Standard 6-2025 American National Standard for the Inspection, Testing, and Maintenance of Closed-Circuit Ammonia Refrigeration Systems

IIAR 6 establishes the minimum requirements for inspection, testing, and maintenance (ITM) applicable to safe closed-circuit ammonia refrigeration system. It is meant to aid in identifying which components should be inspected, tested, and maintained and how frequently these tasks should be performed. This standard is intended to be incorporated as part of a Mechanical Integrity (MI) Program as recognized and generally accepted good engineering practices (RAGAEP). It can be used to perform

a gap analysis for minimum safe requirements of an owner's existing ITM tasks as well as provide the minimum requirements for ITM record keeping responsibilities.

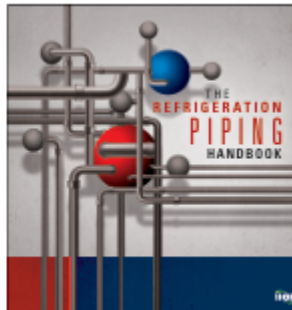


ANSI/IIAR Standard 7-2025 American National Standard for Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating Systems

ANSI/IIAR 7 defines the minimum requirements for developing operating procedures for closed-circuit ammonia refrigeration systems.

Refrigeration Piping Handbook – 2019 Edition with 2025 update of chapter, Pipe Sizing

The *Refrigeration Piping Handbook* has been hailed as one of the best publications ever produced by IIAR. IIAR's *Refrigeration Piping Handbook* is the ultimate guide to modern ammonia refrigeration piping as well as a comprehensive introduction to piping design and installation as it is practiced in the field. The book comes with computer programs for pipe sizing, suction riser sizing, and economic analysis for size selection.



2025 IIAR Initiative Highlights



IIAR 2026 Annual Conference Additions:

- BOGO (Buy One Get On) “Free” End User Registration
- RETA CRST (Certified Refrigeration Service Tech) Training Event
- NASRC CO2 Training Event

2025 IIAR Initiative Highlights

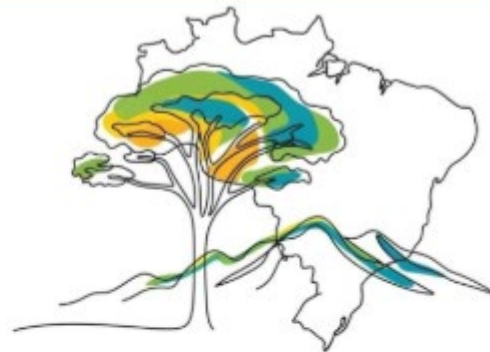
Successful IIAR Latin America Expo & Educational Conferences 2025

- Peru – June 2025 | Chile - August 2025 | Colombia – November 2025



October 7 - 9, 2026

León, Guanajuato, Mexico



XXXII Seminário Internacional IIAR
de Refrigeração Natural para
América Latina

Brasil, 2026

November 2026

Brasil



August 19 - 20, 2026

Buenos Aires, Argentina

2025 IIAR Initiative Highlights

NRF Scholarship Program:

- Twelve New Scholars
- Six Returning Scholars

FOUNDERS' SCHOLARSHIP RECIPIENTS

SENIORS



Renato H. Carreon
University of Minnesota



Zachary Davis
Georgia Southern



Hazel Ferrier
University of Wisconsin-
Platteville



Michael Hintz
West Virginia University



Carly Huen
University of California, San Diego



Hannah McComick
Kansas State University



Francesco Pedulla
Concordia University



Grace Scarborough
University of Texas



Sophia K. Schneider
Kansas State University



Alan Simchick
Washington State University



Muhammad Umar
University of Maryland Baltimore
County



Winters Xia
University of Waterloo

JUNIORS



Bridger Bone
Utah Valley University



Henry Karpovas Lisak
University of Minnesota



Franklin O'Shaugnessy
Purdue University-Ft. Wayne



Seth Reiffer
Ferris State University

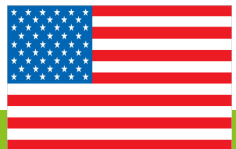


Madelyn Rynsbarger
Grand Valley State University



Annette Simchick
University of Washington

ASHRAE – IIAR MOU



- **2025 IIAR-ASHRAE MOU**

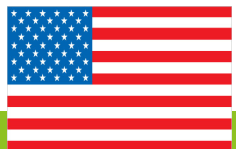
- Updated and signed July 28, 2025
- IIAR-ASHRAE Work Plan started – last meeting December 2, 2025

- **Current Actual Projects with IIAR/NRF Participation**

- ASHRAE 19.15-TRP, Refrigerated Facilities Doorway Infiltration Air Energy Reduction Research Project – **NRF CoFunding the project & IIAR Board Member Kurt Liebendorfer part of Project Management Team**
- IIAR President serves on committee to update the ASHRAE PD on Refrigerants and Their Responsible Use

ASHRAE – IIAR New Initiatives

- **IIAR Would like to Support the following Joint Projects**



- **Sustainability & Resiliency of the Cold Chain ASHRAE Position Document** – IIAR staff designee will join the committee if this new PD is approved by the TPS and DRSC.
- **ASHRAE CEBD Flexible International Building Code Framework & Code development** – IIAR staff designee would like to join the working group if this code development moves forward. IIAR currently attends the Global Advisory Panel meetings discussing this at a high level.
- **ASHRAE Guide for Sustainable Refrigerated Facilities and Refrigeration Systems** – IIAR would like to see a working group to update this document, create a joint marketing campaign with IIAR and other MOUs allies, and for ASHRAE to join an IIAR working group to create an IIAR Academy Online training class for this Guide.

AHRI Introduction

February 1, 2026

Xudong Wang, Vice President, Research

Air-Conditioning, Heating, and Refrigeration Institute

2311 Wilson Blvd., Suite 400, Arlington, VA, USA

AHRI is a Trade Association

330+:



Member Companies: Over 95% of all HVACR and water heating products manufactured and installed in North America

100+:



AHRI standards and guidelines in use across the globe

40:



AHRI Certification Programs: Over 1,200 licensees representing over 70% of all HVACR and water heating products manufactured across the globe

Headquarters: Arlington, Virginia USA

Global Offices:



China (Hefei)



MENA (Dubai)



LATAM (Mexico City)



India (Mumbai)



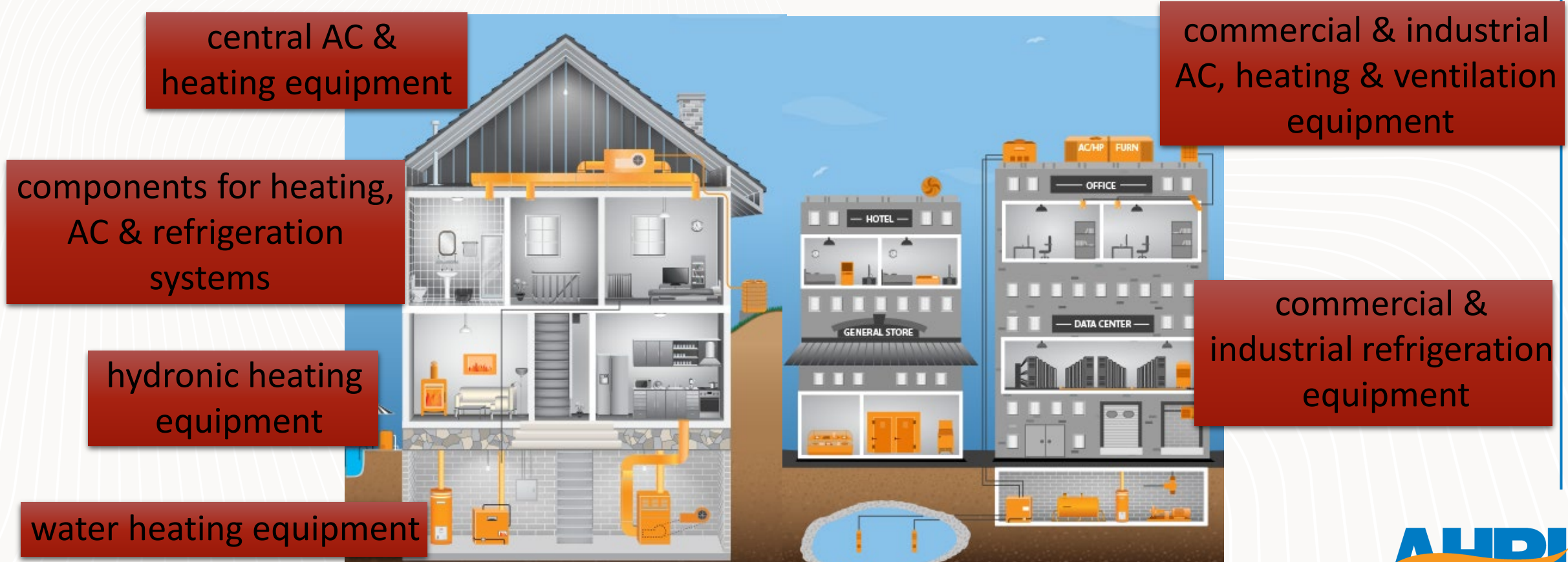
Canada (Toronto)



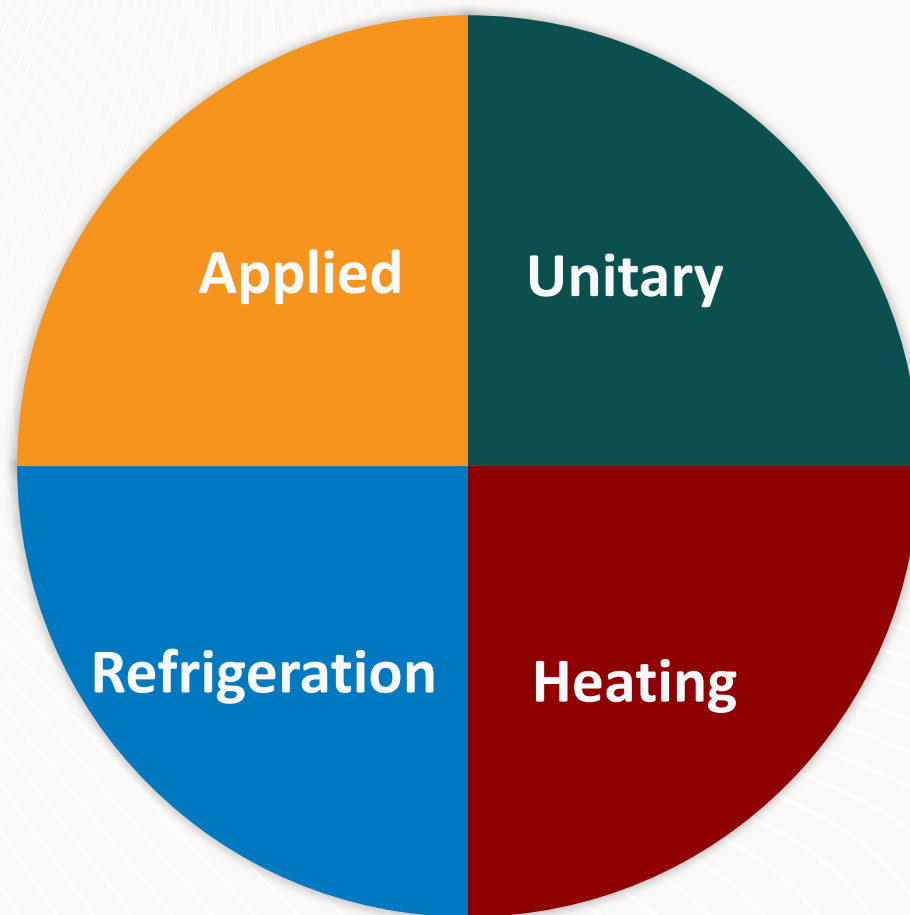
ASEAN (Singapore)

AHRI Members are Manufacturers

Cooling and heating products for residential, commercial, and industrial applications:



AHRI Industry Sectors



Organized Around Four Pillars



AHRI and ASHRAE

- Collaboration on many areas, such as:
 - Advocacy
 - Standards
 - Research

Thank You!

Contact: Xudong Wang

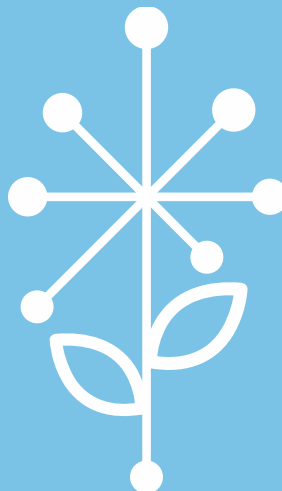
Email: xwang@ahrinet.org Tel: +1-703-600-0305



NORTH AMERICAN
**Sustainable
Refrigeration
Council**

ASHRAE REF Committee

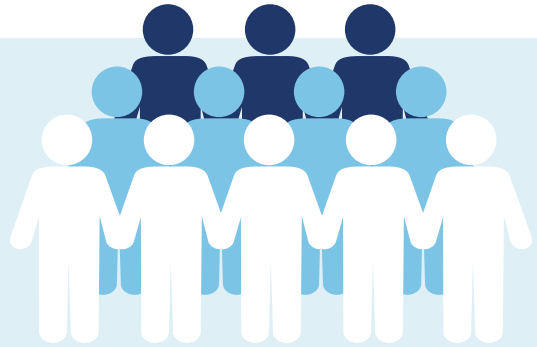
Winter 2026



Who We Are

A 501c3 nonprofit leading the transition to natural refrigerants by collaborating across the refrigeration industry

200+
member
companies



55K+
food retail
locations



Goals

-  Drive a sustainable workforce
-  Facilitate funding opportunities
-  Act as a catalyst for continuous improvement

What are Natural Refrigerants?

CO₂

R744
Carbon Dioxide

C₃H₈

R290
Propane

NH₃

R717
Ammonia



NORTH AMERICAN
Sustainable Refrigeration Council

ALL MEMBERS

TITANIUM



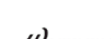
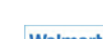
PLATINUM



GOLD

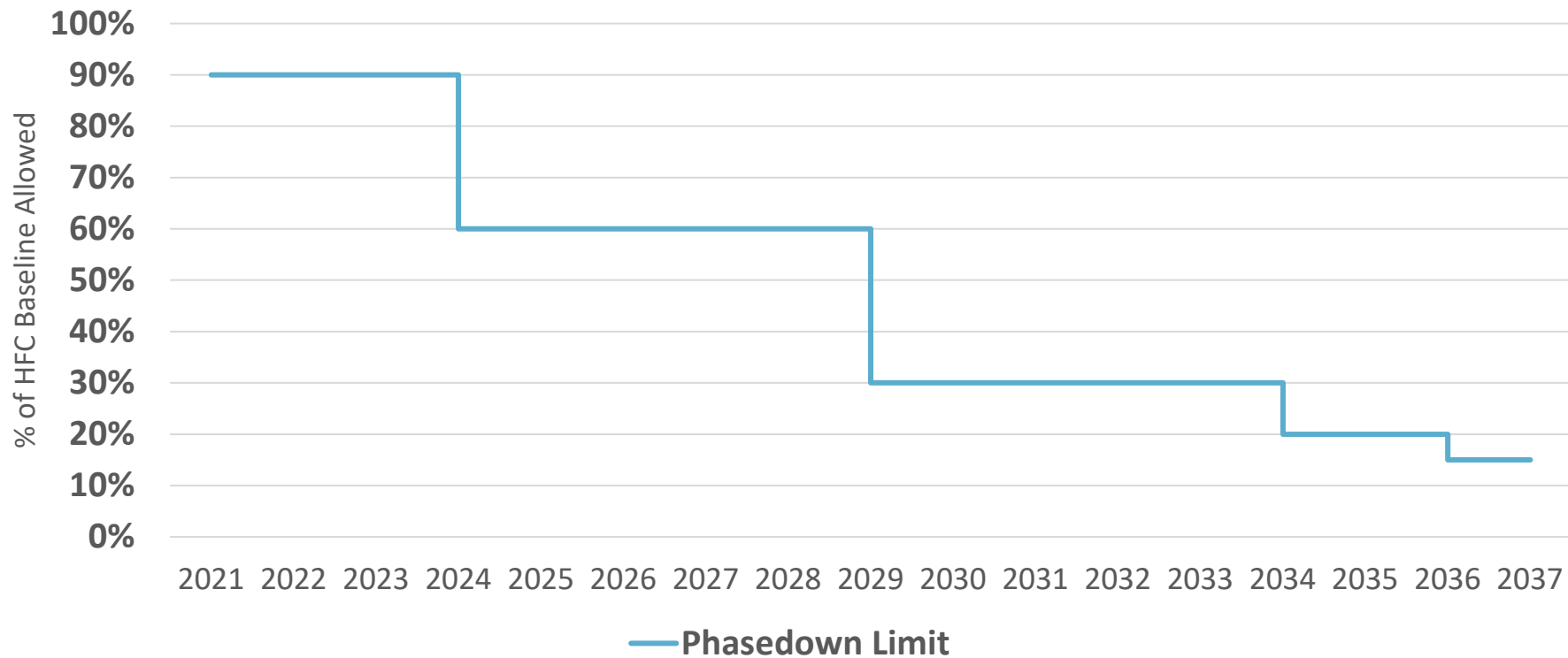


SILVER



HFC Regulations

HFC Phasedown: AIM Act



**85%
Phasedown
by 2036**



NORTH AMERICAN
Sustainable Refrigeration Council

American Innovation and Manufacturing (AIM) Act of 2020

- Directs EPA to phase down production and consumption of hydrofluorocarbons (HFCs) by 85 percent by 2036
- Authorizes EPA to manage HFCs by:

1

Implementing sector-based restrictions to accelerate the transition to lower-GWP, next generation technologies.

TECHNOLOGY TRANSITION RULE

Revised Rule Draft Released September 2025

- New systems: 1400 GWP (2026) 150 or 300 GWP (2032)
- Remote CDUs: 1400 GWP (2026) 150 or 300 GWP (2032)

2

Maximizing reclamation and minimizing emissions from equipment.

EMISSIONS REDUCTION & RECLAMATION (ERR)

Rule finalize September 2024

- Leak repair for system charge >15 lbs (Jan 2026)
- Automatic leak detection for systems >1500 lbs (Jan 2029)
- Use of reclaim for service and repair (Jan 2029)

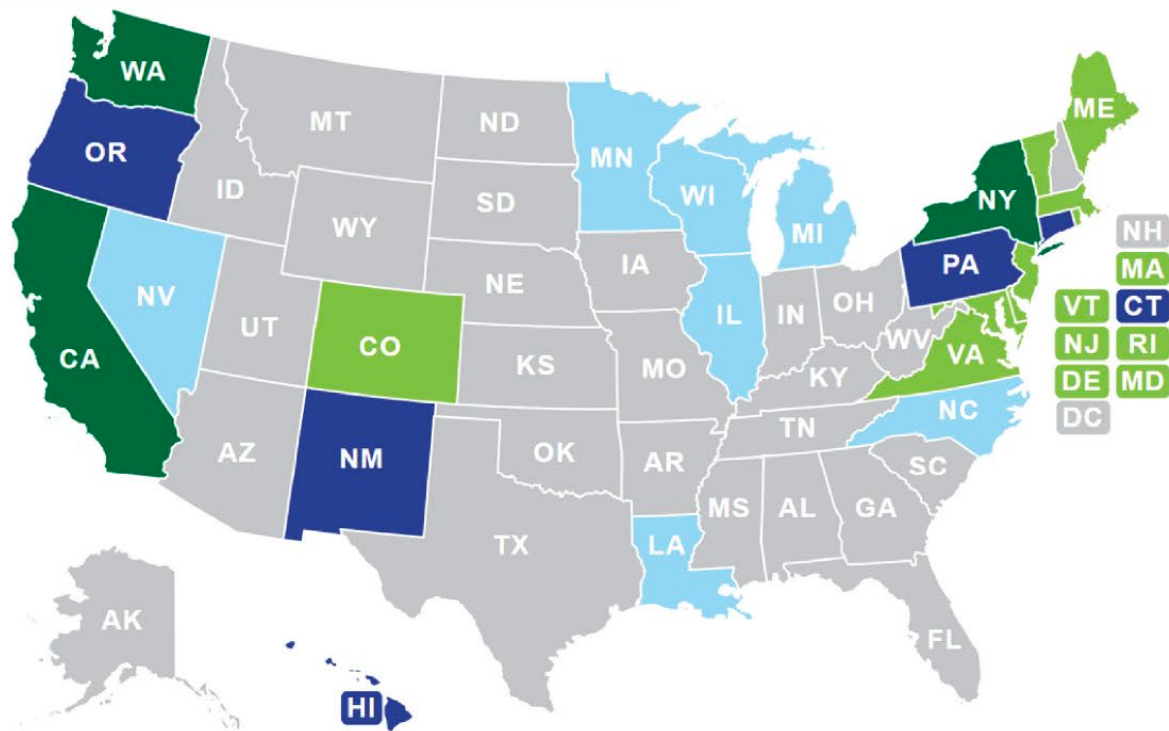


State Refrigerant Regulations

State	Refrigerant Management Program (RMP)	GWP Limit – New Systems/ Equipment	GWP Limit – Existing Systems/ Equipment	Leak Monitoring & Repair	Refrigerant Sales Ban	Ban on PFAS Refrigerants
California	X	X	X	X	X	Proposed
New York	X	X	X	X	X	
Washington	X	X	X	X	X	
Maine						X
Minnesota						Proposed



State HFC Regulations



“HFC Policy Tracker.” North American Sustainable Refrigeration Council, nasrc.org/hfc-policy.

The U.S. Climate Alliance is a coalition of states committed to upholding the Paris Climate Agreement’s goal of keeping temperature increases below 1.5 degrees Celsius.

The Alliance comprises:

58% of the US economy

54% of the US population

41% of net US GHG emissions

“U.S. Climate Alliance Fact Sheet.” U.S. Climate Alliance, www.usclimatealliance.org/us-climate-alliance-fact-sheet.



NORTH AMERICAN
Sustainable Refrigeration Council

Actionable Solutions

Funding

.....

Workforce Development

.....

Education



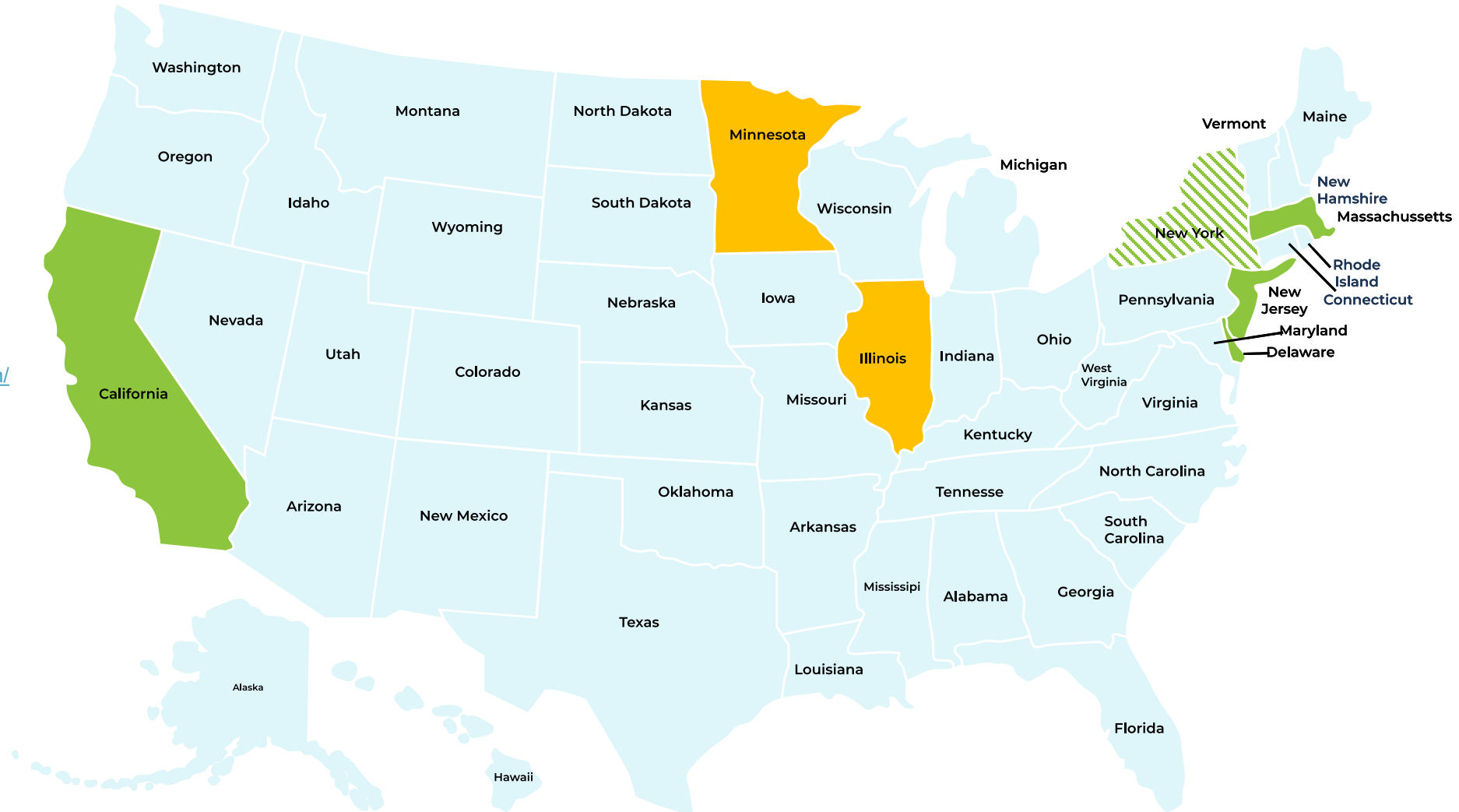
State Funding

Active Funding

- California:
<https://www.fripfunding.com/>
- Massachusetts:
<https://www.mass.gov/how-to/apply-for-a-massdep-commercial-refrigeration-grant>
- Delaware:
<https://dnrec.delaware.gov/climate-coastal-energy/efficiency/cool-switch/>
- New Jersey:
<https://www.njeda.gov/njcool/>
- New York:
<https://nasrc.org/ny-grant-pilot-program/>

Coming Soon

- New York
- Minnesota
- Illinois



California F-Gas Reduction Incentive Program (FRIP)

Goals

- Reduce hydrofluorocarbons (HFCs) emission
- Alleviate barriers to adopting ultra-low-global warming potential (GWP) refrigeration equipment
- Prioritize facilities in disadvantaged and low-income communities, small businesses, & independent facilities

Program Highlights

- [Funding Guidelines](#) and [Addendums](#)
- Application portal: www.FRIPfunding.com
- First come, first served.

Apply by March 31, 2026



The image displays two logos side-by-side. On the left is the California Air Resources Board logo, featuring three overlapping arcs in blue, orange, and green above the text 'CALIFORNIA AIR RESOURCES BOARD'. On the right is the California Climate Investments logo, which is a blue and green diamond shape with the text 'CALIFORNIA CLIMATE INVESTMENTS' and 'Cap and Trade Dollars at Work'.

Sector	Funding
Commercial and industrial refrigeration	\$38.5M



The Workforce Gap

There are simply not enough technicians to transition from HFCs. And the gap is only growing.

- Roughly 80,000 HVACR technician jobs are currently unfilled, or 39% of the total workforce.*
- Technician workforce retiring out.
- Not enough technicians entering the HVACR trade.
- Burnout loop accelerating technician attrition.
- **40,100 job openings for HVACR technicians are projected each year between 2021-2031.****

* Source: "Addressing Hvacr's Skills Gap; Promoting Exciting Trade Career Opportunities." Emerson E360 Blog, 17 Jan. 2023.

** Source: Occupational Outlook Handbook: Heating, Air Conditioning, and Refrigeration Mechanics and Installers. U.S. Bureau of Labor Statistics. (2022, September 8).

Technician Burnout Loop



NORTH AMERICAN
Sustainable Refrigeration Council



NASRC's comprehensive workforce development program to build a sustainable and skilled technician workforce

Build a robust pipeline of refrigeration technician candidates

Increase access to comprehensive training on advanced refrigeration technologies

Increase the number of existing technicians who remain in the refrigeration trade

FOUNDING PARTNERS



R-TRADE Training

WORKSHOPS

Advanced, more
focused topics



nasrc.org/co2-controls-workshop

NASRC TRAINING SUMMITS

- General introduction to **CO2 and Propane** technologies
- Exhibit and **networking**
- Student “Cool Careers” Program



nasrc.org/rtrade/training-events/

ONLINE LEARNING

- 8 Hour
Introductory
Course
- CO2 Basics:
Transcritical
Booster Systems



TECHNICAL TRAINING PROGRAM

Custom localized
training

nasrc.org/rtrade/customized-group-training/



NORTH AMERICAN
Sustainable Refrigeration Council

2026 Training Schedule

Dates	Location	Type
Feb 10 – 12, 2026	Poughkeepsie, NY	Training Summit
Mar 10 – 12, 2026	St. Louis, MO	Training Summit
Mar 17, 2026	San Antonio, TX	Training Workshop (IIAR)
Apr 17, 2026	San Luis Obispo, CA	Student Engineer Training
Apr 21 – 23, 2026	Irwindale, CA	Training Summit

Training Summits to include HVACR Student Career Fairs



nasrc.org/training



NORTH AMERICAN
Sustainable Refrigeration Council

NASRC Student Training & Career Networking

Co-Hosted by:



Cal Poly Campus, San Luis Obispo, CA

In-Person Event | April 17, 2026 | 9 am – 3 pm

- Fundamentals of refrigeration system design
- Introduction to sustainable refrigeration systems
- Interactive sessions with refrigeration tools and resources
- Networking with prospective employers and mentors



Scan to visit nasrc.org/rtrade/calpolyhvacr-2026
for more information and to register.



Who?

Engineering Students & Faculty

Where?

Cal Poly Campus, San Luis Obispo, CA

When?

April 17, 2026, 9am – 3pm

Educational Resources



Member Meetings: *Leveraging network of stakeholders and partners to educate and drive positive change.*

- Natural Refrigerant Webinar Series
- End-User Roundtable
- Workshops and Stakeholder meetings



CO2 Technical Committee: *Equipping the industry with data-driven technical guidance to support CO2 refrigeration in food retail applications.*

- Critical Sensors Guidance
- Release Events Guidance
- Start-up and Cx Guidance



Tools & Resources: *developing educational resources that support industry transition to natural refrigerants.*

- HFC Regulation Tracker
- Fact Sheets
- Case Studies
- Surveys



CO2 Education Committee: *developing educational resources and standards that advance technician proficiency in food retail refrigeration applications.*

- Technical Manual
- Technician Certification



NORTH AMERICAN

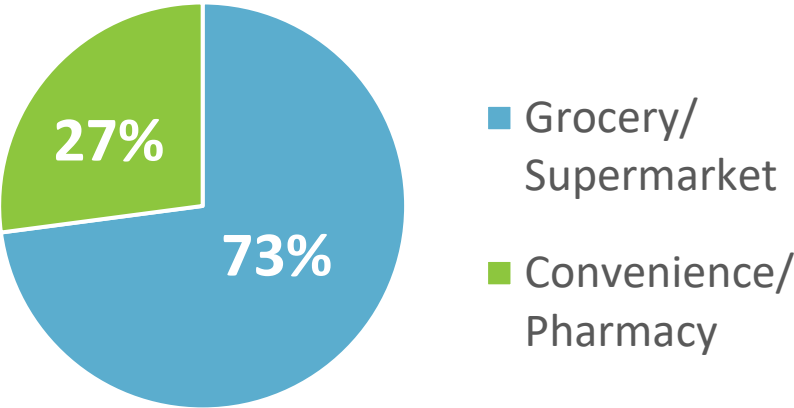
Sustainable Refrigeration Council

2025 Survey Results

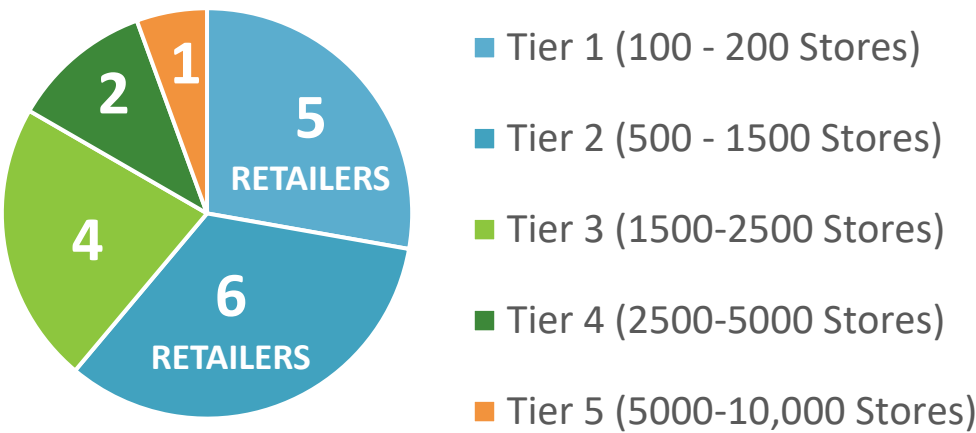
Participants: 18 Food Retailers representing over 29,000 US Locations



PARTICIPANTS BY TYPE



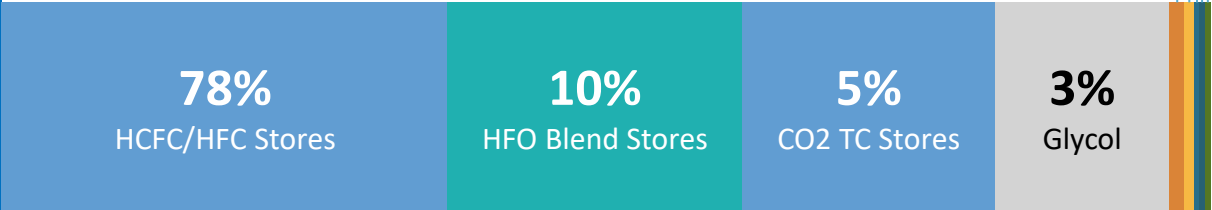
PARTICIPANTS BY TIER



2025 Survey Results

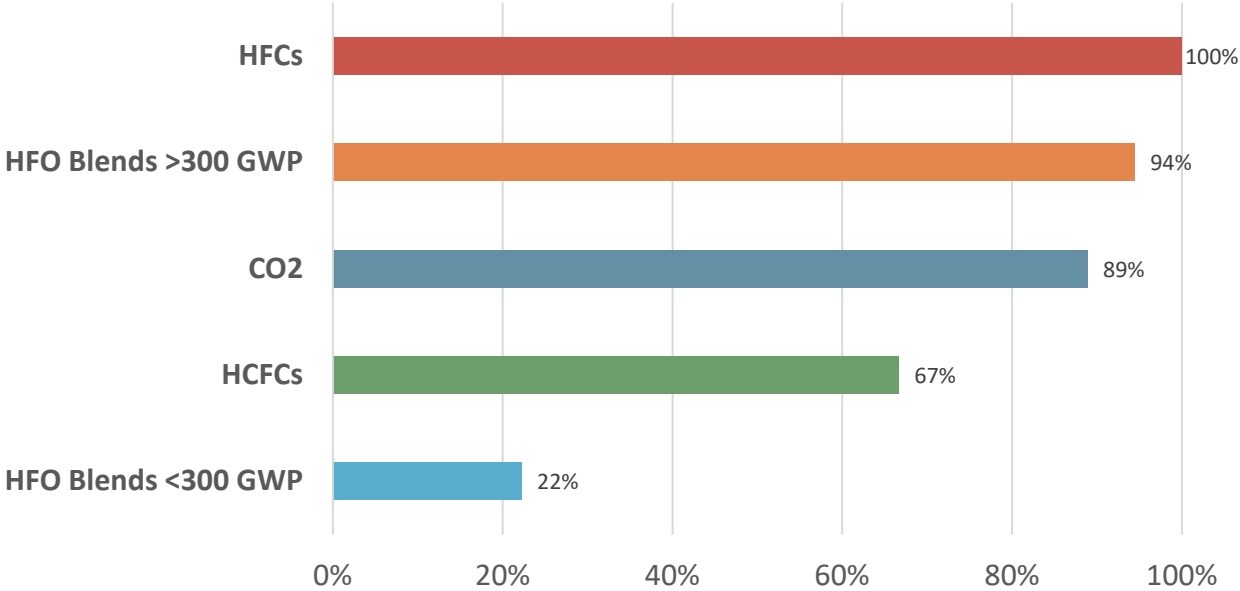
Existing Stores

EXISTING STORES BY SYSTEM TYPE



Ammonia Stores
R290 (Propane) MD Stores
CO2 Condensing Unit Stores
Cascade Stores
CO2 Secondary Store

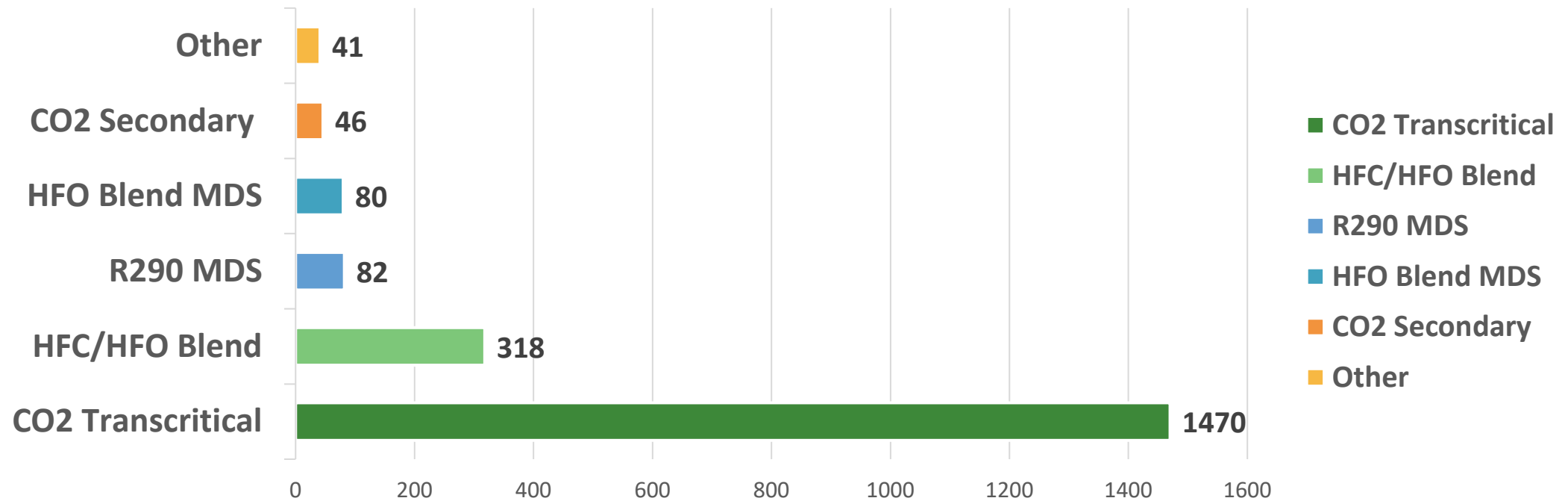
EXISTING FACILITIES: REFRIGERANTS USED BY FOOD RETAILER



New Facilities Projection

2,000+ new stores installed by 2029

NEW STORES PLANNED BY SYSTEM TYPE

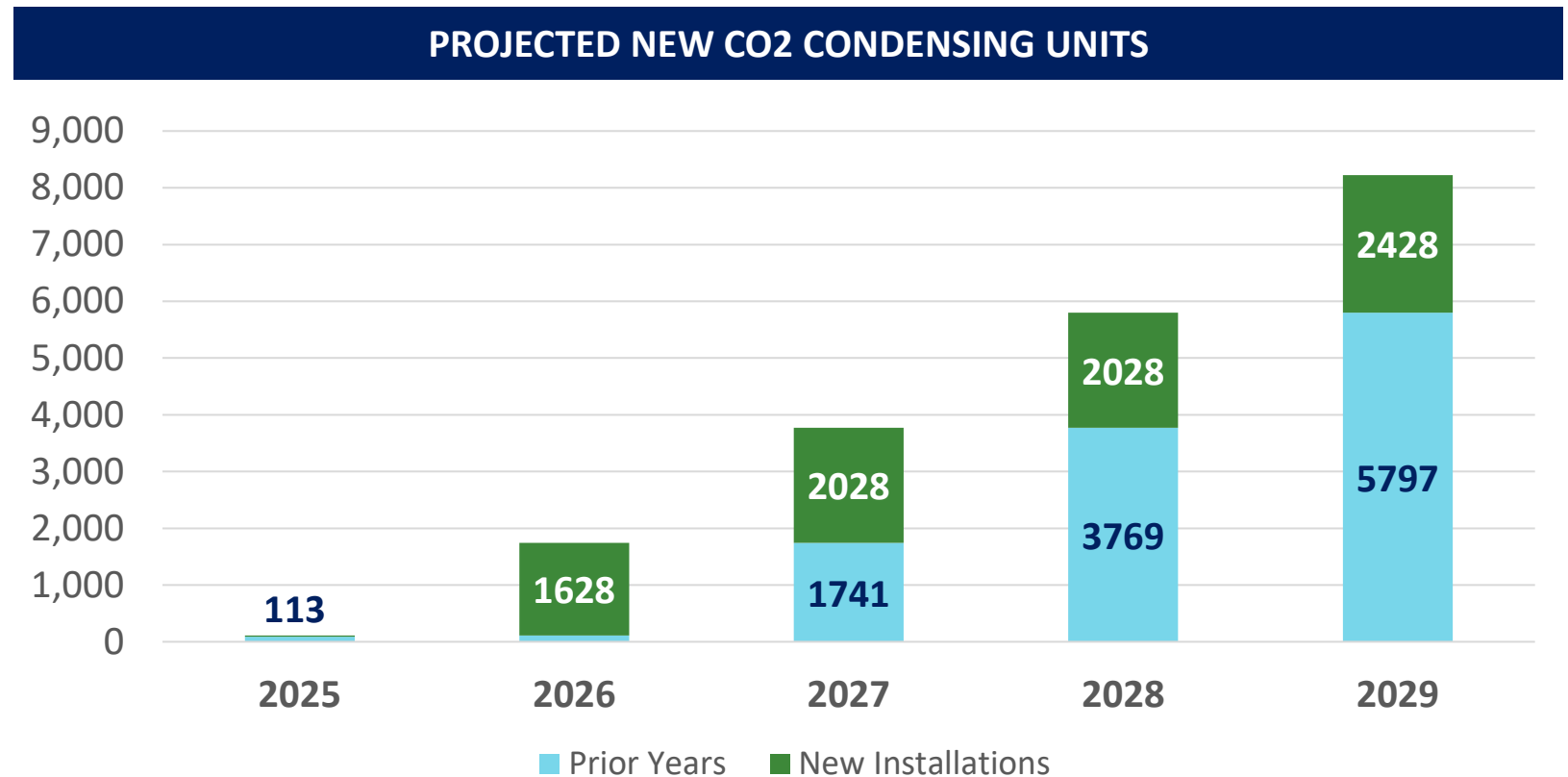


New Equipment Projection

CO2 Condensing Units

- Added to existing store site
- Support new capacity

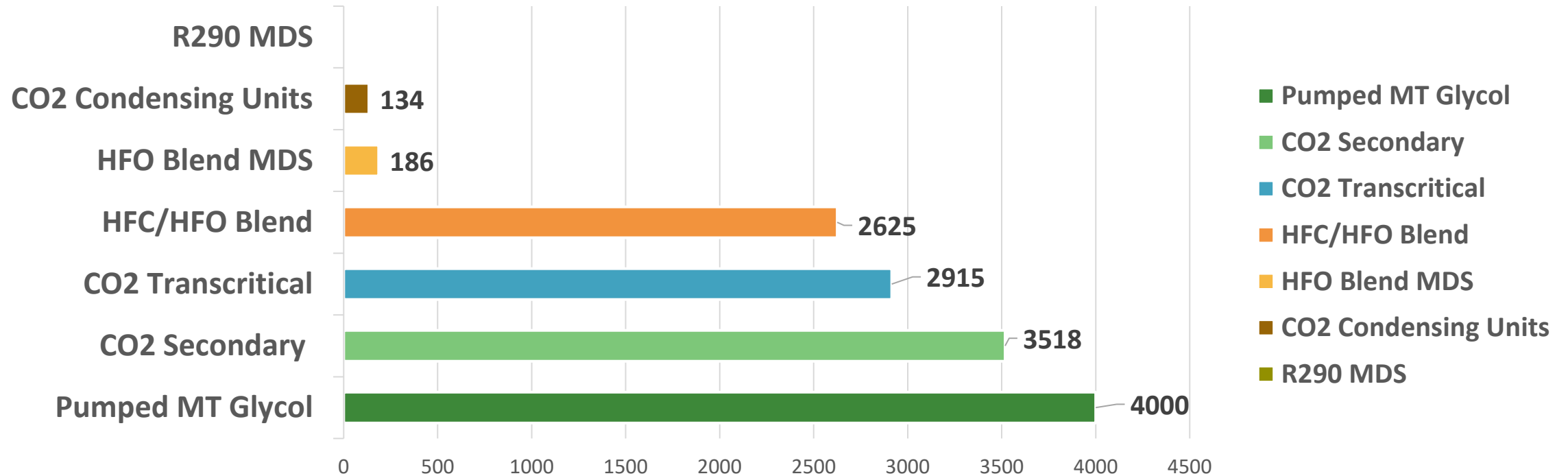
Over 8,200 units installed by 2029



System Replacement Projection

Estimated 13,400 system replacements by 2029

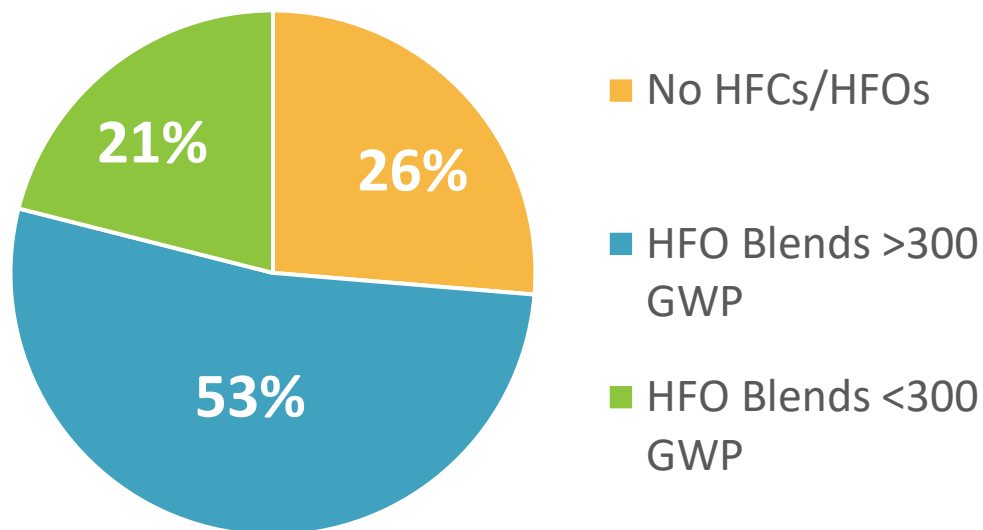
PROJECTED REPLACEMENT BY SYSTEM TYPE



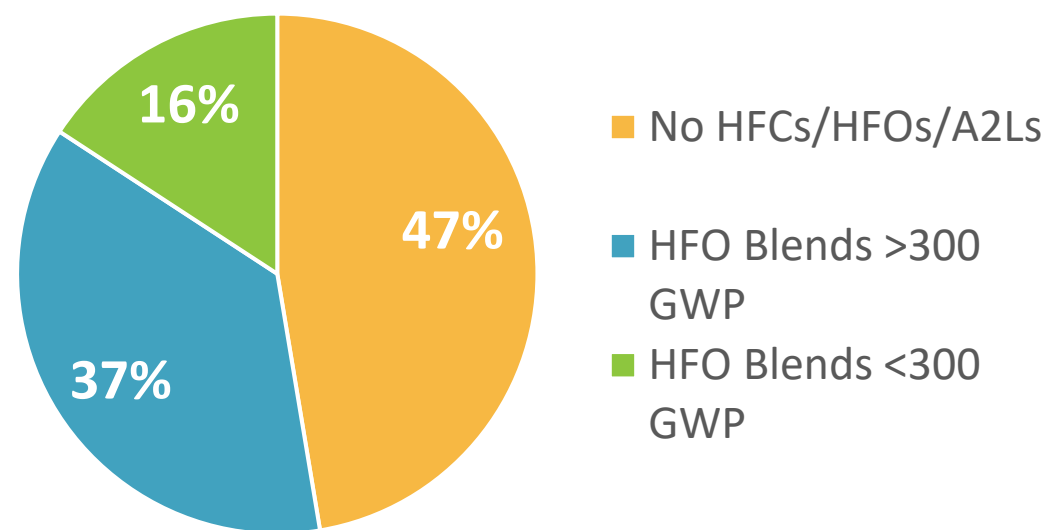
Refrigerant Projection

Projected refrigerants used in replacement and new systems

PRIMARY REFRIGERANT IN REPLACEMENT SYSTEMS



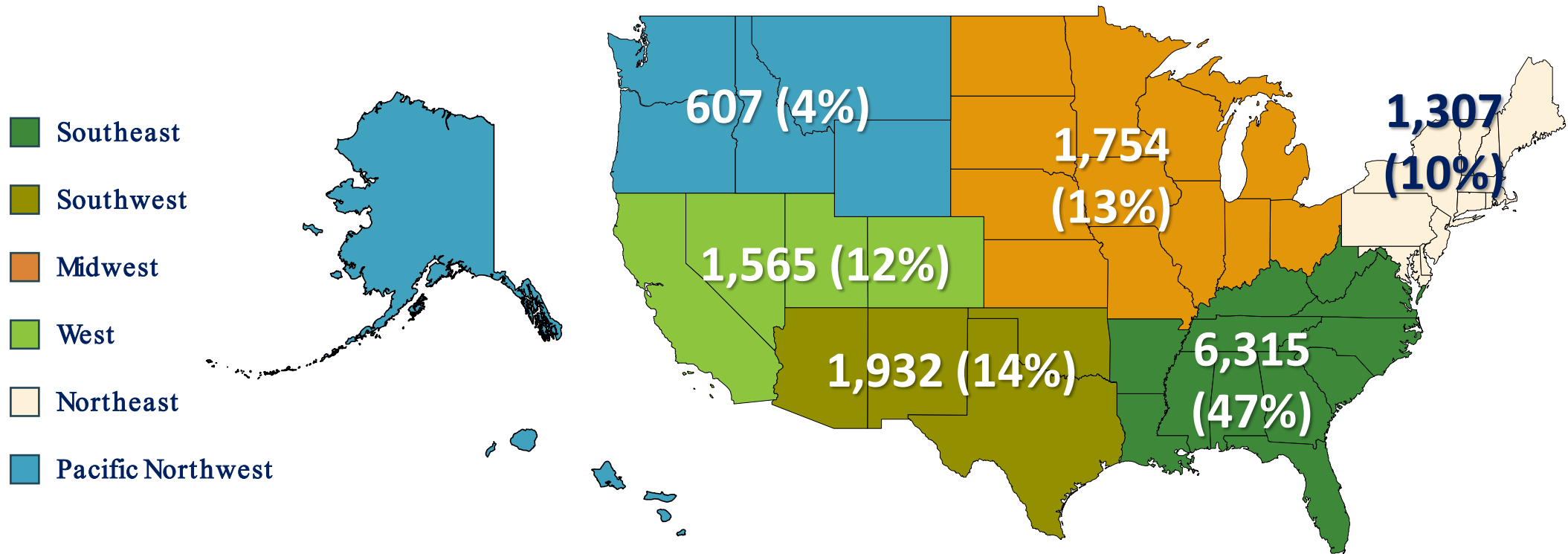
REFRIGERANTS IN NEW SYSTEMS



CO2 TC Growth

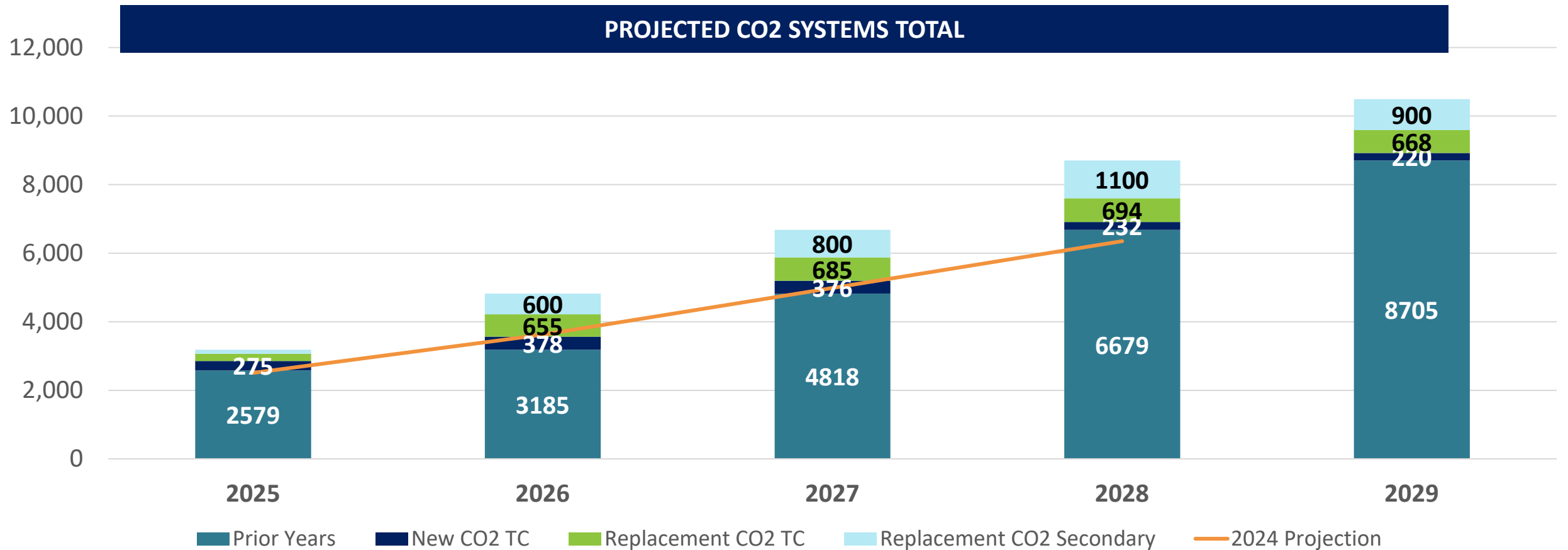
CO2 Transcritical Systems Growth by Region

PROJECTED CO2 TRANSCRITICAL SYSTEMS BY REGION



Projected CO2 Systems

Over 10,000 CO2 systems projected by 2029



CO2 Drivers

Please rate the influence of the following factors on your organization's **motivation** to consider CO2?

- 1 Regulatory Requirement
- 2 Refrigerant Cost
- 3 Future Regulations Risk

Participant Feedback

“CO₂ systems represent our long-term solution aligned with refrigerant phase-down goals, offering a sustainable path forward.”

“Future refrigerant cost”

“The most significant benefit is environmental sustainability. CO₂ (R-744) systems offer a low Global Warming Potential (GWP) alternative to traditional HFC-based systems.”

“Future proof refrigerant, the last change in refrigerant.”

“Long term compliance”



CO2 Barriers

Please rate the significance of the following barriers in **preventing or slowing** your transition to CO2?

1 Trained Technicians

2 Upfront Cost

3 Reliability Concerns

Participant Feedback

“The technology complexity, specifically the controls.”

“Costs”

“Technician ability to keep systems operating reliably”

“Seasoned labor to start up and maintain systems”

“Uptime and reliability of the systems”

“The limited industry resources which include engineering consultants, equipment OEMs, case vendors, controls vendors, installing contractors, and CO2 availability”



2029 Projection

Projected Stores by System Type



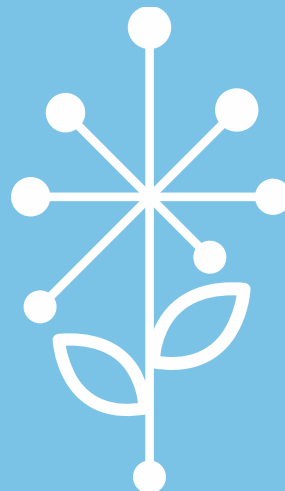
Disclaimer: The information in this slide deck is not intended to and does not constitute regulatory or legal advice.

Thank you!

Danielle Wright

Executive Director

Danielle.Wright@nasrc.org



Definitions

Refrigerants

HFCs

R404a, R507a, R407a, R407f, R422a, R422c, R422d, R427a

HCFCs

R22, R502

HFO Blends >300 GWP

R448A, R449A, R513A

HFO Blends <300 GWP

R454c, R454a, R455a, R471a

HFOs <10 GWP

R1234yf, R1234ze



Definitions

New System Type

CO2 Transcritical

Direct expansion refrigeration system capable of operating above CO2 critical point.

CO2 Secondary

System circulating CO2 as pumped secondary fluid, cooled by primary system through heat exchanger

Pumped MT Glycol

System circulating glycol as secondary fluid for Medium Temp loads.

HFO Blend MDS

Micro-distributed system of self-contained cases using HFO blends, cooled by water-loop

R290 MDS

Micro-distributed system of self-contained cases using propane (R290), cooled by water-loop

HFC/HFO Blend

Traditional direct expansion refrigeration system using HFCs or HFO blends



What region are you providing information for?	If applicable, specify the country in the region you are providing information for.	For the region selected, what are the relevant refrigeration regulations? Any recent changes?	What refrigeration sectors are you providing information for?	For the selected sector, what technologies are end-users specifying and why?	For the selected sector, what are the new refrigerants and how are they being utilized?	For projects with new refrigerants, what are the challenges, major concerns, or market headwinds?	Any other thoughts on refrigeration trends in the region for the specified sector?	Example Projects and Upload of Resources
North America	USA	 in what category? Safety, energy efficiency, construction codes, other ... sales restrictions.	Industrial Process Refrigeration	This now seems too narrow, and maybe they are not specifying, maybe they are asking, maybe it is up to the contractor or engineer or vendor.	Now I wish I could have checked both cold storage and industrial process. Answer: Low charge ammonia and CO2 mostly in supermarket derivative racks, but smaller systems of various types are	Regulatory conflicts. High costs. Limited engineering expertise and resources to design systems properly, e.g. CO2 high pressure and leaks .	Why is US so far behind other countries in considering hydrocarbons in refrigeration? What will happen when the first A2L fires occur?	See Link (1) below.
North America	USA	 in what category? Safety, energy efficiency, construction codes, other ... sales restrictions.	Industrial Process Refrigeration	This now seems too narrow, and maybe they are not specifying, maybe they are asking, maybe it is up to the contractor or engineer or vendor.	Now I wish I could have checked both cold storage and industrial process. Answer: Low charge ammonia and CO2 mostly in supermarket derivative racks, but smaller systems of various types are	Regulatory conflicts. High costs. Limited engineering expertise and resources to design systems properly, e.g. CO2 high pressure and leaks .	Why is US so far behind other countries in considering hydrocarbons in refrigeration? What will happen when the first A2L fires occur?	See Link (1) below.
Asia	India	HCFC Phase out began in 2016, HFC phase down expected to begin in 2032	Cold Storage	Most End users typically don't specify technologies as they are not aware of those technologies. Mostly they will go by what the contractors suggest. In some cases, the end users go to consultants who then suggest technologies. In the broad un-organized market, ammonia is the bigger player for potato and chilli cold stores (account for more than 80% of all cold stores in the country). Rest is a broad mix of Ammonia and Freons. Incidentally, even though Phase out has begun, HCFCs are still sold in the market as there are less stringent regulations.	HFOs are being considered, but only by very select few organizations. CO2 adoption is very low due to high ambient conditions. Ammonia and HFCs are still largely the refrigerants of choice. (Mainly R404A, R134a, R507C). Now, due to the new guidelines, there is a chance that users will move away from high GWP refrigerants. More detail in the 'other thoughts' point.	CO2 has concerns on high ambient, especially since there may be chances of power outages if there are weather incidents or other issues. Mostly people have DG backup but not many use them for long durations. Overall, it will take a few years to actually see the market moving towards HCs or CO2 as there is no real push in terms of regulations.	Regulations and their effective implementations play a strong role in new refrigerant adoption (or moving away from old damaging refrigerants). The effective implementation of these regulations are a concern in these parts of the world (even if the regulations themselves are in place). In India, cold stores storing agri-produce are given subsidy. The agency who made the guidelines for this subsidy has suggested that refrigerants with GWP below 1500 will only be allowed if the cold store wishes to avail subsidy. This is bound to push promoters to use lower GWP refrigerants. The link for this document is given here. There are some mistakes in the document, but this is something that may help at the broad level.	See Links (2) and (3) below.
North America	USA	ASHRAE 15, AIM ACT, State Specific Codes	Supermarket/Food Retail	Secondary Glycol, Secondary CO2 (Phasing and decoupling of working fluids), Self Contained Water Cooled -(Flexibility of staging and redundancy in the systems,) Transcritical CO2 - (Low GWP and not subject to phase out), A2L Chillers - Emerging	R-744 (Parallel Racks, Condensing Units, Transcritical) R-454A, R-455C (A2L condensing units),	A2L - Flammability Concerns, Leak Detection R-744 - Pressure ratings and venting of refrigerant/leaks	Distributed systems seem to be gaining in popularity	
North America	USA	EPA Mandates	Cold Storage	NH3, CO2 and the new Low GWP R-1234ze	Above	Some have picked R-448 but it is not low GWP	Thermal Storage being considered	Current EPA Website for refrigerants
Europe	Denmark	En347	Supermarket/Food Retail	R744	Different HFO, but R744 is the majority	For the HFO it is expected life time before regulation remove the due to tfa	For 50kw and up R744 is dominant. For smaller systems i would have expected This to	www.advansor.com

							happen on smaller systems as well	
Europe	Denmark	En347	Industrial Process Refrigeration	R744 And R717	HFO has limited traction here	HFO is price of refrigerant and expected life time before a ban	R744 is taki g a larger share from R717	www.advansor.com
Asia	Thailand	Ammonia refrigerant regulation	Industrial Process Refrigeration	Ammonia/CO2 Cascade and TC-CO2	I do not know, Do they have any new refrigerant developed today. If you mean HFO, This refrigerant is not popular in Thailand	HFO limited supply due to do not popular.	Ammonia/CO2 Cascade and TC-CO2	ITC own office R-507A/CO2 Cascade, ITC Own Factory TC-CO2, Ruxchai-ASRS Cold storage.

Examples and Links:

- (1) <https://drive.google.com/open?id=1LemNXBFkM6MAQeYRgBfxscqmHI7OO-wO>
- (2) https://nccd.gov.in/uploads/ENGINEERING_GUIDELINES_AND_MINIMUM_SYSTEM_STANDARDS_FOR_IMPLEMENTATION_IN_COLD_CHAIN_COMPONENTS_Second_Print_2d4bc6727d.pdf
- (3) https://ozonecell.nic.in/wp-content/uploads/2023/09/2-HPMP-Stage-III.pdf?utm_source=chatgpt.com

Attachment C

Request Form for a new ASHRAE Position Document

To: TECHNOLOGY COUNCIL Document Review Subcommittee

Originator: Bruce Nelson, Vice Chair REF-CPCC Date: 17 Oct 2025

Title: SUSTAINABILITY AND RESILIENCY OF THE COLD CHAIN

Purpose for the Position Document: To examine and improve the sustainability and resiliency of the cold chain globally. Significant opportunities exist within the cold chain, both in developed and developing economies, to increase food production, reduce food waste, reduce direct and indirect emissions of green house gases, reduce environmental pollution, and improve profitability and business viability. Purpose of the document is to list these opportunities and encourage their development and uptake.

Scope proposed for the Position Document: To list, describe, and encourage the application and implementation of refrigeration and related technologies which will improve sustainability and resiliency across the entire cold chain, including post-harvest cooling, food processing, storage and distribution, retail, and transportation market segments. Topics covered in the PD would relate to decarbonization of the cold chain, including reducing GHG emissions (both direct and indirect), encouraging the use of low-GWP refrigerants, eliminating or minimizing negative environmental impacts of refrigerants, reducing food waste, use of renewable energy sources, making the economic case (improved profitability), and reduction of regulatory barriers to adoption of the listed technologies and best practice.

ASHRAE Members, Committees with topic interest (if known): REF-CPCC, TC10.1, TC10.2, TC10.6, TC10.7.



Shaping Tomorrow's Built
Environment Today

What Are You Looking For?



[JOIN](#) [VOLUNTEER](#) [MAKE A GIFT](#)

[BOOKSTORE](#)

[LOG IN](#)

[ABOUT](#) ▾

[TECHNICAL RESOURCES](#) ▾

[PROFESSIONAL DEVELOPMENT](#) ▾

[CONFERENCES](#) ▾

[COMMUNITIES](#) ▾

[MEMBERSHIP](#) ▾



2026 ASHRAE WINTER CONFERENCE

LEADERSHIP PRESENTATION

Code of Ethics

We will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interest.

Value Statement

In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all.

Harassment and Discrimination

ASHRAE strictly prohibits and does not tolerate discrimination against members or applicants for membership because of such individual's race, color, religion, age, sex, sexual orientation, national origin, physical or mental disability, pregnancy, genetic information, veteran status, uniformed service member status, or any other category protected under applicable law.

Commercialism

ASHRAE's Commercialism Policy allows for Society activities that fulfill the mission of technological advancement with adherence to business plans that generate income to offset operational expenses such as AHR Exposition, ASHRAE periodicals, website, and Society conference events such as the Welcome Party, luncheons, registration kits, and receptions.

MARKETING CENTRAL



ASHRAE Acronym Guide

Download this quick guide for an easy reference of acronyms commonly used in ASHRAE. Easily see and search through over 400 terms!

[DOWNLOAD](#)

Presentations

Find the most current:

- ▶ ASHRAE Leadership
 - ▶ *This Is ASHRAE*
- ▶ ASHRAE Handbook
- ▶ Research Promotion
 - ▶ Standards
- ▶ Technical Committees
- ▶ Other presentations

[LEARN MORE](#)

ASHRAE President

Bill McQuade, P.E., CDP, Fellow ASHRAE, LEED AP is ASHRAE's President for the 2025-26 term.

[LEARN MORE](#)

ASHRAE Branding Guide

Reference this quick and informative resource for all of your ASHRAE branding needs and questions including logos, color palettes, chapter information, and typography.

[LEARN MORE](#)

Visit Marketing Central for marketing materials and resources.

- Brochures
- Press Releases
- Forms
- Chapter Logos
- Newsletters

...and more!

2025-28 ASHRAE Strategic Plan

[ABOUT](#)[TECHNICAL RESOURCES](#)[PROFESSIONAL DEVELOPMENT](#)[CONFERENCES](#)[COMMUNITIES](#)[MEMBERSHIP](#)**1**

Position ASHRAE as the **global leader** in advanced solutions to improve indoor environmental quality (IEQ) and address climate change.

2

Pursue **impact-focused engagement** by targeting stakeholders to support a strong workforce and maximize utilization, adherence, and trust of ASHRAE's global expert resources.

3

Increase the **accessibility** of ASHRAE content, resources, and member opportunities.

OBJECTIVES

- Lead the development of widely adopted standards to support indoor environmental quality, decarbonization, and resilience.
- Develop alliances and diverse working groups that position ASHRAE to lead and collaborate globally in identifying challenges, defining solutions, and developing approaches to address them.
- Develop resources based on member needs and industry trends.

- Tailor and target engagement and resources to ASHRAE members and defined key stakeholders.
- Provide guidance to targeted stakeholders on impactful ways to maximize the positive downstream effect of their engagement on the built environment.
- Empower professionals in their journey to maximize industry impact in support of ASHRAE's mission and vision.
- Pursue partnerships to amplify the impact of ASHRAE's mission and support the HVAC&R and built environment workforce.

- Identify and address structural, content, and financial barriers to access.
- Align communication and delivery methods and formats to enhance accessibility and effectiveness of content, resources, and volunteer opportunities.
- Strengthen communication channels with and through chapters and regions to empower contribution to the Society as thought partners in adapting resources to local context and needs.

Download the entire plan in English and Spanish at
ashrae.org/strategicplan

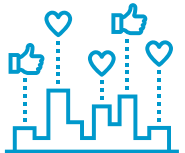
November 2025 BOD Meeting Highlights

[ABOUT](#)[TECHNICAL RESOURCES](#)[PROFESSIONAL DEVELOPMENT](#)[CONFERENCES](#)[COMMUNITIES](#)[MEMBERSHIP](#)

Membership Dues will increase \$5 USD (\$290) in the 2026-27 SY



DEI Committee will report to Members Council starting July 1 as a Standing Committee, not a grassroots committee. This is an expansion of ASHRAE's commitment to diversity, equity and inclusion.



Indoor Environmental Quality Center of Excellence will be created to provide industry resources for learning about IEQ. Initial funding will come from reserves.



3rd International Board Meeting ASHRAE is committed to holding a Board Meeting outside of North America every three years. Our next International Board Meeting will take place in Brasilia, Brazil in November 2026.

Hot Topics in Government Affairs



AI / Data Centers



EPCA Modernization (DOE Appliance and Equipment Standards)



IAQ/IEQ/Thermal Comfort



Refrigerant Transition



Energy Codes and Resiliency



Workforce Development (trades and STEM)

Sign up for the Government Affairs Update
online or email GovAffairs@ashrae.org



Fundraising Totals for SY 2024-25

RP Campaign Total



\$2,824,181



ASHRAE Foundation



\$1.95M
In New Endowments

Within the RP Campaign

ASHRAE Awarded Scholarships
40 Endowed Chapter Scholarships
39 Society Student Scholarships

\$1,977,286 For Research

\$494,487 For Endowed Research

\$257,081 For Scholarships

\$95,078 For YEA, ALI and other Programs

College of Fellows

\$5,000 Total Raised

Life Members Club

\$46,000 Total Raised

More than 4,500 contributions from Members, Organizations and other Associations



- Streamlined, Flexible International Building Code Framework
 - ✓ Framework completed & rolled out at 2025 Decarb Conf
 - ✓ First country session held in Kenya (Brazil & India are planned)
 - ✓ Developed Building Code Strategy Game for Chapters
- Research, standards & guide projects moving forward
 - ✓ AI Data Center Framework
 - ✓ Decarb Strategies for Supermarket Industry Archetypes Guide
 - ✓ Update HVAC Equipment Service Life Data
 - ✓ Whole Life Carbon Gap Analysis
 - ✓ Whole Building/MEP Benchmarking Data Research
 - ✓ Whole Life Carbon Calculation Guide for Building Systems
 - ✓ Refrigerant Emissions Management, Tracking, and Compliance
- Training content expanded (Guides & Online Training)
- Five strategic initiatives w/draft actions presented in Las Vegas



New Standards



STANDARD

ANSI/ASHRAE Standard 52.2-2025
(Supersedes ANSI/ASHRAE Standard 52.2-2017)
Includes ANSI/ASHRAE addenda listed in Appendix L

Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

See Informational Appendix L for approval dates by ASHRAE and the American National Standards Institute.

The Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for the publication of addenda, revisions, and changes. For details, contact the ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

This latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

© 2025 ASHRAE ISBN 1541-2335



PDF includes a hyperlinks for convenient navigation. Click on a reference to a section, table, figure, or equation to jump to its location. Return to the previous page via the bookmark menu.





STANDARD

ANSI/ASHRAE Standard 62.1-2025
(Supersedes ANSI/ASHRAE Standard 62.1-2022)
Includes ANSI/ASHRAE addenda listed in Appendix Q

Ventilation and Acceptable Indoor Air Quality

See Appendix Q for approval dates by ASHRAE and the American National Standards Institute.

The Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for the publication of addenda, revisions, and changes. For details, contact the ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

This latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

© 2025 ASHRAE ISBN 1541-2335



PDF includes hyperlinks for convenient navigation. Click on a reference to a section, table, figure, or equation to jump to its location. Return to the previous page via the bookmark menu.





STANDARD

ANSI/ASHRAE Standard 62.2-2025
(Supersedes ANSI/ASHRAE Standard 62.2-2022)
Includes ANSI/ASHRAE addenda listed in Appendix G

Ventilation and Acceptable Indoor Air Quality in Residential Buildings

See Appendix G for approval dates by ASHRAE and the American National Standards Institute.

The Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for the publication of addenda, revisions, and changes. For details, contact the ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

This latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

© 2025 ASHRAE ISBN 1541-2335



PDF includes hyperlinks for convenient navigation. Click on a reference to a section, table, figure, or equation to jump to its location. Return to the previous page via the bookmark menu.





STANDARD

ANSI/ASHRAE Standard 90.4-2025
(Supersedes ANSI/ASHRAE Standard 90.4-2022)
Includes ANSI/ASHRAE addenda listed in Appendix E

Energy Standard for Data Centers

See Informational Appendix E for approval dates by ASHRAE and the American National Standards Institute.

The Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for the publication of addenda, revisions, and changes. For details, contact the ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

This latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30091, E-mail: orders@ashrae.org, Fax: 404/521-2122, Telephone: 404/521-2122 (worldwide), or toll-free 1-800-527-4773 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/reprints.

© 2025 ASHRAE ISBN 1541-2335

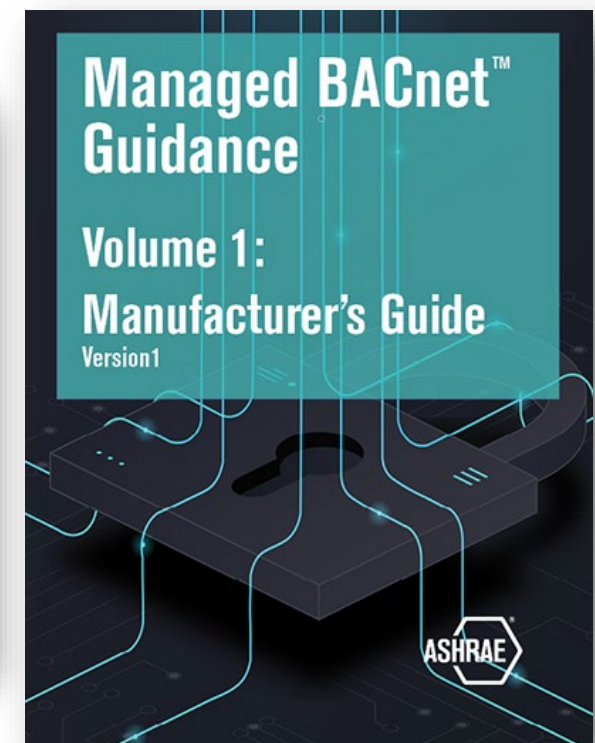
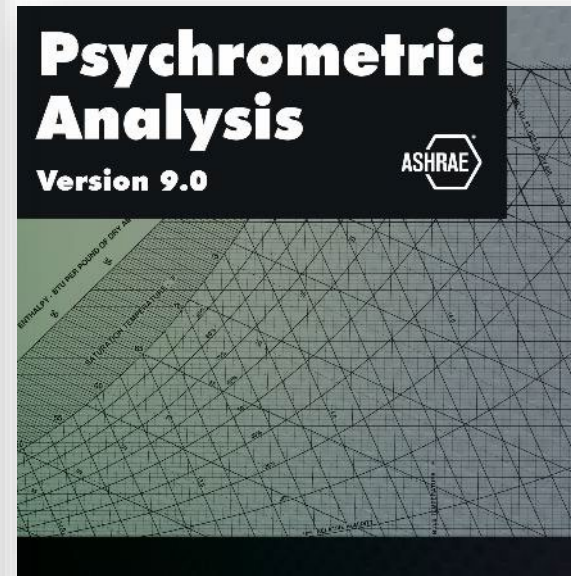
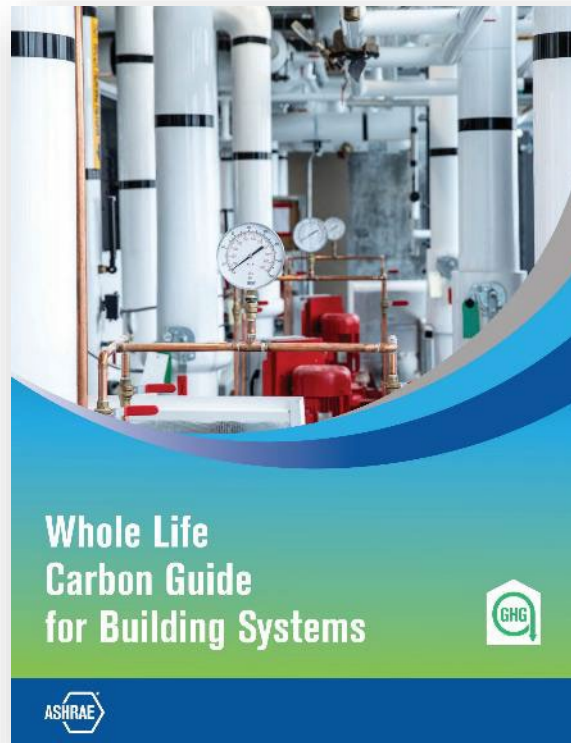
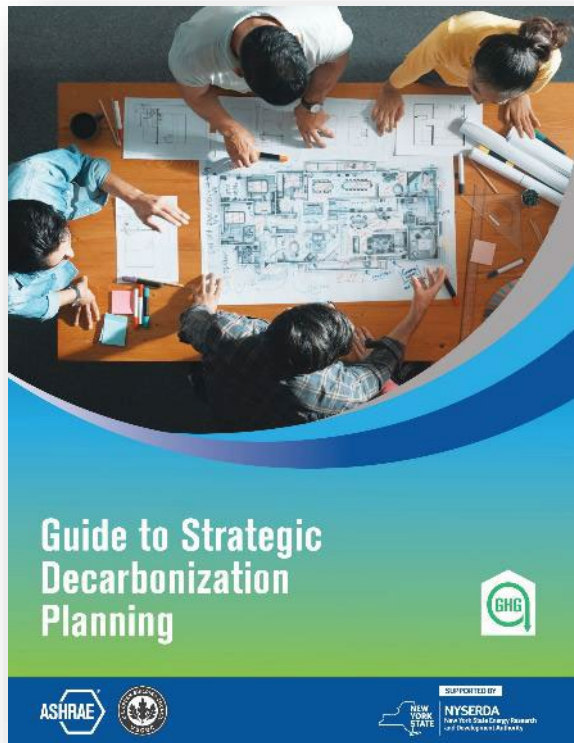


Online supporting files include Section 6 MLC calculation examples.



Coming Soon! ASHRAE Standard 244: Sustainability Assessment for Mechanical, Electrical, and Plumbing Products

Get the Latest and Greatest Publications & Downloads



Visit the ASHRAE Bookstore in Palace Ballroom I Emperors Level, and at the AHR Expo

eLearning

Updated Course



ASHRAE Learning Institute

Free Publication



Register for ALI's Live Virtual
Training and receive a FREE
ASHRAE Standard or Guideline!

Certification

Record Application Total
SY 2025



Farr and Setty Family Foundation Funds Scholarships for ALI, AGT, and eLearning Registrants

ASHRAE Members in their first 5 years of membership get **35% off** one ALI, AGT, or eLearning course, thanks to support from the Farr and Setty Family Foundation Funds!

- ✓ One-time use per Society Year
- ✓ Apply 3 weeks before your course
- ✓ Must include a chapter officer's support letter

Where to apply? Check the page of the course you're interested in for an application.



2026 Topical Conferences

[ABOUT](#)[TECHNICAL RESOURCES](#)[PROFESSIONAL DEVELOPMENT](#)[CONFERENCES](#)[COMMUNITIES](#)[MEMBERSHIP](#)

Los Angeles, CA, April 13-14, 2026

**2026 Women in ASHRAE
Leadership Symposium**



Varanasi (Kashi), Uttar Pradesh
April 24-25, 2026

**Fourth ASHRAE Developing
Economies Conference**



Seattle, WA, September 23-25, 2026

**2026 ASHRAE Building
Decarbonization Conference**



Beirut, Lebanon, October 8-9, 2026

**Seventh International Conference on
Efficient Building Design**



Kuwait University City, Kuwait, November 16-18, 2026

**Ninth International Conference on Energy
Research and Development (ICERD – 9)**



2026 AHR Expo

ABOUT

TECHNICAL RESOURCES

PROFESSIONAL DEVELOPMENT

CONFERENCES

COMMUNITIES

MEMBERSHIP



Show Times

Monday & Tuesday: 10AM – 6PM | Wednesday: 10AM – 4PM



AHR Expo opens Monday at 10:00 AM in the Las Vegas Convention Center, Central and South Halls.

Flash your ASHRAE Conference badge for FREE entry to the Expo.

Stop by the **ASHRAE Booth C2102**

Hear **Bill McQuade, 2025-26 ASHRAE President** address the *2026 State of the Industry: Today's Market Challenges, Opportunities & What's Ahead*

Tuesday, February 3 / 10:00-11:00AM

S222 (Las Vegas Convention Center – South Hall)

Changes to Future ASHRAE Annual Conferences

The Future of ASHRAE Conferences Ad Hoc charge is to recommend a new overall Society conference strategy which specifically focuses on changes to the typical Annual Conference.

A recommendation will be made at the 2026 Annual Conference in Austin. Approved changes would be reflected in 4-5 years.



2026 ASHRAE Annual Conference

Join us in Austin, TX
June 27 – July 1

Registration Opens in March

Nominate for Committees and Awards

[ABOUT](#)[TECHNICAL RESOURCES](#)[PROFESSIONAL DEVELOPMENT](#)[CONFERENCES](#)[COMMUNITIES](#)[MEMBERSHIP](#)

Find Committees and Nominate Yourself or Others

FEB
2026

February: Nominations for appointed committees are due.

JUN
2026

June: Speak with your committee ExO/CO if your current appointment/elected position ends to be nominated for another.

SEP
2026

September 18: Nominations for elected positions are due. (Publications & Education Council, Tech Council, RAC, TAC, Standards, Handbook, Nominating)

HONORS & AWARDS

The following awards have a MAY 1 deadline:

Fellow

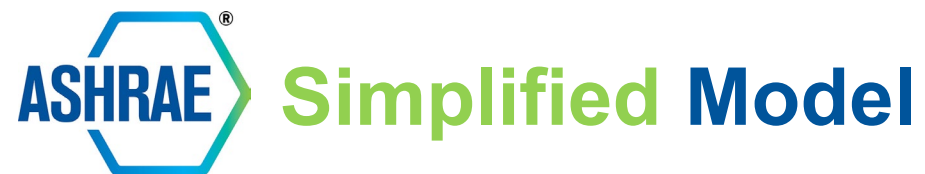
Honorary Member

ASHRAE Hall of Fame

F. Paul Anderson Award

ASHRAE Pioneers of the Industry

ASHRAE Award for Distinguished Public Service



Learn More at ashrae.org/2026Bylaws

Member Grade					Student Member Grade		Other			
Member				Young Professional	Tenured Professional	Life Service Member	Presidential Member	Student Member	Student Branch Advisor	Honorary Member
WB Tier 1 Standard Dues	WB Tier 2 80% of dues	WB Tier 3 60% of dues	WB Tier 4 40% of dues	50% (+ tier discount)		FREE		90% (+ tier discount)	80% (+ tier discount)	FREE
Anyone involved in the building sciences industry				Anyone ≤ 35 yo who joins pays this fee first for 2 years	Anyone ≥ 65 yo with 25 years cumulative membership	30 yrs cumulative member + ≥ 65 + DSA or 15 qualifying service points	Served as Society President	Must be currently enrolled in university, college, junior college or technical institute	Faculty member who is ASHRAE member & must submit application and submit annual report	Any notable person of preeminent professional distinction & elected by the BOD
Handbook Online + *Journal , HPB, Insights + Tech Portal + Member Pricing + Voting Privileges and Serve as C,R,S level roles Choice of 1: eLearning Course, Certification Study Guide, Standard or Guideline				Handbook Online + *Journal, HPB, Insights + Tech Portal + Member Pricing		Same as Member + waived dues, extreme discounts to W&A Conferences. Invitations to VIP events (Presidential Only)		Same as Young and Tenured Professionals		Full Member Benefits if requested
Additional New Member Benefits: Receive a Comp Winter or Annual Conference to attend in first 2 years + Handbook Online access for 1 year										

Proposed Dues Rates

Career and Economic discounts off main dues rate as set by the Board of Directors.

Economic discount based on country of residence as defined by the World Bank.

High Income = Tier 1, Upper Middle Income = Tier 2, Lower Middle Income = Tier 3, Low Income = Tier 4

ASHRAE Membership Dues Rate Table		Career Based Discount				
		All Others	Young Pro OR Tenured Pro	Student Branch Advisor	Student	Life Service & Honorary
Economic Discount		0%	50%	80%	90%	100%
World Bank Tier 1	0%	\$290	\$145	\$60	\$30	FREE
World Bank Tier 2	20%	\$230	\$115	\$45	\$25	FREE
World Bank Tier 3	40%	\$175	\$90	\$35	\$20	FREE
World Bank Tier 4	60%	\$115	\$60	\$25	\$10	FREE

The dues rates and percentages are for illustrative purposes only, based on 2026-2027 dues rates. The Finance Committee is responsible for reviewing, recommending changes and interpreting fees, dues, and privileges. (ROB 2.408.004)



Timeline

Learn More at ashrae.org/2026Bylaws

COMPLETED

- **February 2025:** MMAH to bring motion to the Board of Directors to approve plan. Motion will be tabled to allow for 60-day "cooling off period." **COMPLETE**
- **By the 2025 May BOD Meeting:** BOD to approval the final plan. **COMPLETE**
- **June – November 2025:** MMAH works with SRC for Bylaws amendments **COMPLETE**
- **2025 Fall BOD Meeting:** **BOD passed Bylaws amendment by unanimous vote.**

UPCOMING

- **2026 Winter Conference:** Bylaws amendment presented at the Meeting of the Members (Saturday Plenary Session) in Las Vegas.
- **Spring 2026:** Proposed Bylaws amendment on Spring Ballot
- **June 28, 2026:** Election closes
- **By June 30, 2027:** If Bylaws amendment are approved, all changes made to membership database, website, promotional materials, ROB, Committee/Council MOPs and training materials. *(One year to implement changes to various documents and reports)*
- **July 1, 2027:** New model implemented.



New Mastercard Program for Business Owners

[ABOUT](#)[TECHNICAL RESOURCES](#)[PROFESSIONAL DEVELOPMENT](#)[CONFERENCES](#)[COMMUNITIES](#)[MEMBERSHIP](#)

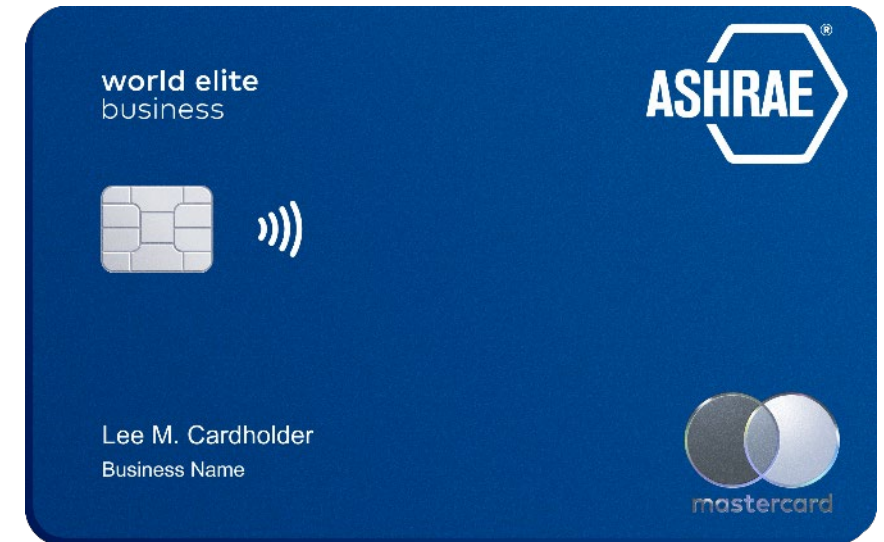
Coming Soon!

More information on ashrae.org in March 2026

Are you an ASHRAE Member who owns a business?

Consider applying for an ASHRAE Mastercard!

- Spend \$10,000 on your ASHRAE Mastercard within the first 90 days, and **Mastercard will pay your annual ASHRAE Member dues** the following Society Year.
- **Up to 2.1%** unlimited cash back on all purchases with autopay.
- **5% cash back** on HVACR supplies and equipment.



Media Inquiries



**Asked to make a statement
on behalf of ASHRAE?**

Please send all media
inquiries to
publicrelations@ashrae.org
before responding to
members of the press.

Thank you!

Questions or Comments?

[ashrae.org](https://www.ashrae.org)



Associate Society Alliance (AASA)

AASA INTERNAL TECHNICAL SEMINAR

02.02.2026: 10⁰⁰ - 11⁰⁰ AM - Caesars Palace, Florentine II (P)

**Global Perspectives/ Refrigerant Transition/ Refrigeration and
Decarbonization with Study Cases in Developing Countries**



Chair: Prof.univ.dr.eng Gratiela –Maria TARLEA

AASA INTERNAL TECHNICAL SEMINAR AGENDA

02.02.2026: 10⁰⁰ - 11⁰⁰ AM

SPEAKERS :



MADI SAKANDE
President U-3ARC



ANDY PEARSON
Group Managing
Director of Star
Refrigeration Ltd.



MARTIN DIERYCKX
General Manager
Environment Research
Center DAIKIN Europe NV,
Daikin Europe



TINA BIRMPILI
Chief Officer, Multilateral Fund
Secretariat, United Nations
Environment Programme



JAMES CURLIN
Head of the Law Division's
OzonAction Branch, United Nations
Environment Programme

TECHNICAL SEMINAR AGENDA

Length: 60 minutes
4 Short Presentations

- 1. *U-3ARC OPPORTUNITIES AND CHALLENGES ON REFRIGERANTS TRANSITION IN AFRICA!*** - Madi SAKANDE, President U-3ARC, Basile SEBURIKOKO, Secretary in charge of communication and external affairs U-3ARC .
- 2. *CASE STUDIES IN REDUCING RISK*** - Dr. Andy PEARSON, Institute of Refrigeration, UK - Group Managing Director of Star Refrigeration Ltd.
- 3. *GLOBAL VISION ON DECARBONISATION IN HVAC*** - Martin DIERYCKX, General Manager Environment Research Center DAIKIN Europe NV, Daikin Europe.
- 4. *MONTREAL PROTOCOL PROJECTS IN SUPPORT OF DEVELOPING ECONOMIES*** - Tina BIRMPILI - Chief Officer, Multilateral Fund Secretariat, United Nations Environment Programme; James CURLIN - Head, OzonAction United Nations Environment Programme.



AASA INTERNAL TECHNICAL SEMINAR

Thank You!



19 - 21
NOVEMBER
AGRICULTURE COLLEGE
GROUND, PUNE

ISHRAE® | ISHRAE
TRADE FAIRS

India's Premier Refrigeration & Cold Chain Exhibition in
The Refrigeration Capital of India
Pune



Smart | Green | Resilient
Refrigeration & Cold Chain

To Make **Atmanirbhar Bharat** and
Mission Global Annapurna

ABOUT REFCOLD INDIA 2026

REFCOLD India, organized by ISHRAE Trade Fairs, stands as South Asia's premier platform dedicated to refrigeration and cold chain technologies. This prestigious event unites global innovators, technology leaders, manufacturers, suppliers, and key industry stakeholders to showcase the latest advancements, sustainable solutions, and emerging trends. It serves as a catalyst for knowledge exchange, business development, and technological collaboration. With a strong focus on energy efficiency, innovation, and future-ready infrastructure, REFCOLD India plays a vital role in strengthening the cold chain ecosystem, essential for sectors like food, pharmaceuticals, and agriculture. The event fosters growth, innovation, and strategic partnerships across the industry.

MESSAGE FROM CHAIRMAN

Warm greetings from ISHRAE Pune, the "Refrigeration Capital of India." We welcome you to REFCOLD INDIA 2026 in Pune – the largest international expo and a true "Kumbh Mela" of the Refrigeration and Cold Chain industry. We would heartily welcome your participation in showcasing sustainable, smart, and future-ready technologies that will drive the growth of our industry.

Er. Arvind Surange – Chairman - Refcold India 2026,
Past President - ISHRAE, CMD - ACR Project Consultants Pvt Ltd

MESSAGES FROM ISHRAE STALWARTS

It gives me great pleasure to announce that REFCOLD India 2026 will be hosted in Pune – the Refrigeration hub of India. With its strong base of innovation, education, and industry, Pune offers the perfect setting for South Asia's premier Cold Chain & Refrigeration Exhibition. We look forward to your partnership in making REFCOLD 2026 a true milestone in India's cold chain and HVAC&R journey.

Mr. Jayanta Kumar Das - Society President,
ISHRAE [SY - 2025 - 26]

REFCOLD 2026@Pune (Refrigeration Capital of India) will become the largest ever event for Refrigeration/Cold Chain industry in India. It will be the best opportunity to connect to industry leaders, Decision Makers and Government Officers looking forward for maximum companies to come forward and demonstrate their products and come forward and support ISHRAE for our mission to create awareness about Importance of Cold Chains for Nation Building.

Mr. Pankaj Dharkar - (Founder - PDA) MEP and Green
Building Consultant, an ASHRAE, IGBC & ISHRAE Fellow

Pune is emerging as the Cold Chain hub of Western India, with strengths in horticulture, dairy, meat, frozen foods, and pharmaceuticals. Home to leading food processors, QSRs, and Pharma companies, the city drives demand for cold storages, pre-cooling, and reefer transport. Proximity to Mumbai port boosts exports, while e-grocery and food delivery fuel last-mile growth. Truly, Pune is the Refrigeration Capital – the place to exhibit, explore new technologies, and grow your business.

Shri N.S. Chandrasekar - Society Chair Education & Presidential Member, ISHRAE Sustainability Consultant and Certified Energy Auditor @ Genex Consultants

I am delighted to welcome you to Refcold India 2026 in Pune. This landmark event drives innovation, sustainability, and growth in the refrigeration and cold chain sector. Pune, with its strong industry and technology base, provides the ideal backdrop for collaboration and knowledge exchange. Join us in making this edition of Refcold impactful and future-ready.

Dr. R Saravanan - Professor & Head, Department of Mechanical Engineering, Anna University Chennai
President Elect, ISHRAE SY 2025-26

REFCOLD India 2026, Pune – where innovation meets opportunity! From cutting-edge products to powerful seminars and conferences, it's the one place for consultants, trainers, and engineers to upgrade skills, network with peers, and drive the future of India's refrigeration and cold-chain industry.

Ramesh Paranjape - Senior Refrigeration Consultant,
ASHRAE Fellow, Life member

ADVANTAGE PUNE

Pune, strategically situated in Maharashtra's prosperous agricultural and dairy belt, is an ideal hub for cold chain and refrigeration business opportunities. The region boasts a strong presence of agriculture, dairy farming, food processing industries, and a well-developed logistics network, making it a natural fit for cold chain infrastructure. Its proximity to major production zones and urban markets enhances the efficiency of product movement, ensuring freshness and quality. Pune's thriving industrial base and innovation-driven ecosystem also attract technology providers and entrepreneurs, fostering collaboration across the value chain. This dynamic environment positions Pune as a key player in India's evolving cold chain landscape.

MESSAGE FROM THE CONVENER

South Asia's biggest Refrigeration & Cold Chain event is coming to Pune, the major hub of Refrigeration industries of India. A unique platform to connect with industry leaders, decision makers, and government officials. Showcase innovations, explore opportunities, and join ISHRAE in creating awareness about the importance of Cold Chains in Nation Building. Come Home-Come Home to REFCOLD 2026.

Shri Virendra Borade – Convener of REFCOLD 2026,
Director – Ecosmrt Systems & Solutions Pvt.Ltd.

MESSAGES FROM INDUSTRY CAPTAINS

Congratulations to ISHRAE for organising REFCOLD 2026 and creating India's premier exhibition on refrigeration and the cold chain. Such platforms strengthen our industry by showcasing innovation, fostering collaboration, and highlighting sustainable solutions. We, at The Federation of Associations of Cold Storages of India will be happy to support this initiative. We wish you all the best!

Mukesh Aggarwal - President of Federation of Cold Storage Associations of India

The pharmaceutical industry relies heavily on robust cold chain infrastructure to ensure the safety and efficacy of life-saving vaccines and medicines. REFCOLD 2026 in Pune provides an excellent platform to showcase advancements that support this mission.

Jitendra Patil - Senior General Manager, Engineering Services, Serum Institute of India Pvt Ltd

We are delighted that REFCOLD 2026 is being held in Pune, in close proximity to Navi Mumbai – a region with one of India's most advanced cold storage and logistics infrastructures. This exhibition provides an excellent opportunity to highlight synergies between Pune's innovation and Mumbai's distribution strength. We wish the organisers and participants great success.

Lalji Savla - President, Navi Mumbai Association of Cold Storage Owners Chairman, Savla Foods and Cold Storages Pvt Ltd

REFCOLD 2026 is a landmark platform that brings together the latest technologies & solutions in refrigeration and cold chain. For Maharashtra, a hub of agriculture & food processing, such initiatives are vital in reducing wastage and ensuring quality. The Association extends its best wishes for a successful and impactful event.

Rajkishor Kendhe - President, Maha Cold Storage Association

Congratulations to REFCOLD 2026 for uniting pioneering minds and technologies shaping India's cold chain. I am confident this platform will inspire collaborations and accelerate India's journey toward a smarter, sustainable, and world-class cold chain ecosystem.

Anand Chordia - Director, Innovation & Technology, Suhana Spices Chairperson - Food Processing Committee, MCCA

REFCOLD Pune 2026 will be the biggest and most exciting event in Refrigeration and Cold Chain that India and this part of the world has experienced! By bringing together an exhibition, seminars, and conferences under one roof, it creates opportunities for knowledge exchange, professional development, and collaboration across industries. I wholeheartedly welcome you all to be a part of this amazing journey!

Harshal Surange - Cold Chain Consultant, Empaneled Cold Chain Expert with Global Cold Chain Foundation, ASHRAE Region XV Refrigeration Chair (2024-25).

WHO SHOULD ATTEND?

Owners, Managers, Operators, Service Providers from following Sectors :

- Cold Storages and Cold Chain Industry
- Dairy, Horticulture, Poultry, Meat and Fishery Industries, Ready-to-Eat Food & Pharma Industry
- Food Processing, Logistics and Supply Chain Companies
- Refrigeration Equipment Manufacturers, Suppliers, Contractors & Service Providers
- Electrical Equipment, MEP, Lighting, Fire fighting, Automation and Allied items Suppliers.
- Turnkey project consultants, Refrigeration consultants
- Policy Makers, Academia, Institutions and Government Bodies
- Thermal Insulation and allied product Suppliers & Contractors

WHY EXHIBIT AT REFCOLD?

- Showcase latest, Sustainable & innovative products and technologies
- Connect with decision-makers & buyers
- Expand business reach in India's booming cold chain market
- Engage with industry leaders and build partnerships
- Leverage the REFCOLD brand powered by ISHRAE

KEY FEATURES



**B2B
Networking**



**Unique Product
Showcase**



**Innovation
Zone**



**Knowledge
Sessions**



**REFCOLD
Awards**



**Demo
Zone**



**Launch
Pad**



**Global Poster
Competition**

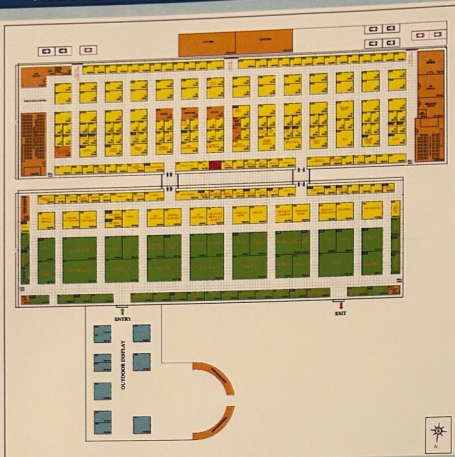
REFCOLD INDIA GLIMPSES



300+ Exhibitors
15000+ Visitors

- International Conference with Global Experts
- Sustainable Equipment & Project Designs
- Net-Zero Products
- Renewable Energy Systems, Pathways to Achieve Carbon Neutrality
- Buyer-Seller Meetings for Targeted Business Growth
- Awards Recognizing Industry Excellence

FLOOR PLAN - REFCOLD INDIA 2026, PUNE



For Exhibition, Sponsorship & Participation Opportunities:

Mr. Himanshu Chitnis | M: +91 88002 66290 | E: headtradefairs@ishraehq.in

Mr. Prabodh Hamilton | M: +91 88002 65398 | E: headsales@ishraehq.in

To Know More, Please Contact the Hosting Committee of REFCOLD India 2026:

Er. Arvind Surange - Chairman | E: arvind.surange@gmail.com

Er. Sharang Natu - Vice-Chairman | E: sharang.refcon@gmail.com

Mr. Virendra Borade - Convener | E: convener@refcold.in

Mr. Nandkishor Kotkar - Co-Convener | E: nandukotkar@gmail.com