



NORTH AMERICAN  
**Sustainable  
Refrigeration  
Council**



Annual Report



**Your success is our success, and together, we are forging a path towards a more sustainable and resilient future.**

Thinking back on our accomplishments of 2023, I am filled with gratitude for every one of you—our dedicated team, esteemed members, generous donors, and invaluable partners.

Last year marked a monumental step towards achieving our mission as **we ventured into the world of workforce development**. Recognizing the critical shortage of refrigeration technicians and its profound impact on natural refrigerant adoption, we took decisive action.

With the publication of our Workforce Development Report in 2023, we **unveiled actionable solutions** to address this pressing issue, one of which was increasing training opportunities.

That’s why we launched the Natural Refrigerant Training Summit pilot program—a daunting endeavor to which we wholeheartedly committed. **The industry’s support was overwhelming**. Partners from all corners of the industry—OEMs, service contractors, retailers, and more—rallied together to support the event. Organizations offered their facilities free of charge. Companies sent their trainers and training units and networked with technicians (read more about it on page 8).

This collective effort from such a diverse group of organizations—many of which consider each other competitors—was a testament to the power of collaboration and the shared goal of safeguarding our planet for future generations. **It’s the reason NASRC exists.**

In reflecting on our membership program, we realized that its true value lies in the strength of our community. Together, we are driving meaningful progress and shaping the future of the grocery refrigeration industry. Every initiative we undertake and every milestone we achieve is ultimately for the betterment of our industry, the planet, and you. And we’re proud of that.

How do we measure success? For every retailer that can feasibly adopt natural refrigerants, we celebrate. For every technician who learns the skills and technology to make it happen, we rejoice. **Your success is our success**, and together, we are forging a path towards a more sustainable and resilient future.

While we applaud our collective accomplishments, we recognize that our work is far from over. But our commitment and our community are more powerful than ever. The strength of our network has always been—and will continue to be—the driving force behind all that we do.

As we embark on the year ahead, I am filled with optimism and determination. Let’s make 2024 another successful year for you, NASRC, and our industry!

Sincerely,

Danielle Wright  
Executive Director  
NASRC

## Board of Directors



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*President/CEO*  
CoolSys



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**Dustin Searcy**  
Parker Sporlan



The three core pillars of our work together are funding to accelerate the adoption of naturals, education to accelerate the market for naturals, and workforce development to grow the technician workforce.



### OUR MISSION:

NASRC is an environmental 501c3 nonprofit taking action to advance natural refrigerants and shape a more sustainable future for grocery refrigeration.

### OUR VISION:

To significantly lessen the environmental impact of refrigeration through widespread adoption of natural refrigerants and other innovative technologies.

Natural refrigerants—including carbon dioxide (CO2), ammonia, and hydrocarbons— are the most climate-friendly refrigerant alternatives and offer a future-proof solution to the high global warming potential (GWP) Hydrofluorocarbon refrigerants (HFCs) commonly used in grocery stores.

Once considered a suitable replacement for ozone-depleting substances, HFCs are super-polluting greenhouse gases (GHGs) and one of the most potent drivers of climate change. Pound for pound, HFCs trap thousands of times more heat in the atmosphere than CO2. **Scientists estimate that HFCs alone could contribute to up to 0.5°C of global warming by the end of the century.** Classified as short-lived climate pollutants, HFCs have a disproportionate impact on warming in the near term, making their mitigation significantly more urgent than other GHGs.

Grocery refrigeration is considered one of the most impactful and cost-effective opportunities to reduce HFC emissions. The average grocery store uses large quantities of HFC refrigerant in each system and has a very high leak rate of approximately 25% of the refrigerant charge annually (about 875 lbs). We estimate the climate impact from grocery refrigeration leaks alone to be roughly 55 million metric tons of CO2 equivalent emissions (MTCO2e) annually, or more than half a billion MTCO2e over 10 years.

A growing body of policymakers has identified addressing HFCs in grocery stores as a “low-hanging fruit” to achieve their climate targets, leading to increasing regulatory pressures. These regulatory pressures and rising corporate climate commitments have stimulated a widespread transition from HFC refrigerants.

**Natural refrigerants have zero or near-zero GWP** and are considered a technically viable and future-proof solution. Still, a unique set of market barriers—such as upfront cost premiums, the shrinking technician workforce, and limited training opportunities—have prevented widespread adoption in U.S. grocery stores.

The North American Sustainable Refrigeration Council (NASRC) is a 501(c)(3) environmental nonprofit working in partnership with the grocery refrigeration industry to advance climate-friendly natural refrigerants and reduce GHG emissions caused by traditional HFC refrigerants. We collaborate with stakeholders from across the industry—including service contractors, equipment manufacturers, engineering firms, consultants, utilities, trade organizations, and over 55,000 food retail locations—to eliminate the barriers to adopting natural refrigerants in grocery stores.

NASRC serves as the common ground for commercial refrigeration, policy, energy, environment, and education stakeholders to collectively build a sustainable future for refrigeration. The three core pillars of our work together are funding to accelerate the adoption of naturals, education to accelerate the market for naturals, and workforce development to improve technician recruitment, training, and retention. Thank you.

*Accelerate adoption of natural refrigerants*

## The Barrier

Natural refrigerant systems and equipment are typically associated with upfront cost premiums compared to traditional HFC technologies. Natural refrigerants are not a “drop-in” solution for existing facilities, so transitioning from HFCs requires a costly complete refrigeration system replacement. This cost burden is particularly challenging for small and independent businesses and those operating in disadvantaged communities, as these businesses often lack the financial resources to transition their facilities.

## NASRC Solutions

Funding mechanisms to offset the cost of natural refrigerant technologies can accelerate the transition from HFC refrigerants and drive adoption volumes toward achieving economies of scale. Funding support is crucial for small and independent grocers disproportionately impacted by the refrigerant transition and other regulatory pressures. NASRC cost solutions focus on coordinating incentive funding and developing new financial mechanisms to support the transition from natural refrigerants.

# OUR PROGRESS IN 2023

## State Funding

### California



Appointed as the third-party administrator of the California Air Resources Board (CARB) F-gas Reduction Incentive Program (FRIP), a \$65MM incentive program that will support adopting climate-friendly refrigeration technologies across California.



Supported information sharing and workforce development grant deliverables for the 13 food retail sites that received grants under the initial CARB FRIP program in 2020.

### New York



Secured a second grant from the New York State Department of Environment Conservation to coordinate natural refrigerant installs in existing stores serving under-funded NYS communities.



Invested the grant to support two CO2 remodel projects and line up additional projects for 2024.

### Other States



Distributed resources to the 47 states that received planning grants under the Inflation Reduction Act Climate Pollution Reduction Grants to encourage the implementation of FRIP in their state.

*Accelerate market for natural refrigerants*

### The Barrier

A swift transition from HFC refrigerants will require industry alignment and market readiness to meet the growing demand for natural refrigerant technologies. As the adoption of natural refrigerants rises, there is an opportunity for knowledge sharing and technical guidance to align the industry and enable stakeholders to move forward together.

### NASRC Solutions

Accelerating the market for natural refrigerants will require a holistic approach that includes technology optimization, improving education and awareness, technical guidance, and industry alignment. NASRC is uniquely positioned to leverage our powerful network of industry stakeholders to facilitate knowledge sharing, develop and disseminate technical guidance, and align goals to allow for coordinated progress.

## OUR PROGRESS IN 2023

### Retailer CO2 Adoption Forecast

- Surveyed 13 major U.S. food retailers representing over 18,000 store locations to project the demand for CO2 refrigeration systems.
- Published a summary of results to help the industry prepare for the increase in demand over the next five years.

### Retailer CO2 Working Group

- Founded a retailer working group to develop and advance solutions to potential challenges with CO2 systems.
- The group developed a proposed equipment specification to increase the minimum pressure rating for CO2 systems to be circulated for industry alignment.

[CLICK HERE to view the Retailer Adoption Forecast Summary](#)

*Accelerate adoption of natural refrigerants*

### The Barrier

The grocery refrigeration industry faces an increasingly critical technician shortage. There are not enough refrigeration technicians to keep up with essential operations, let alone enable the transition from HFCs and meet regulatory timelines. The shortage has led to demanding, unsustainable schedules, causing some technicians to leave the field, further exacerbating the workforce shortage. Moreover, limited training opportunities on natural refrigerant technologies are further bottlenecking the industry's ability to swiftly transition from HFCs. The industry must address technician recruitment, training, and retention to build a sustainable technician workforce.

### NASRC Solutions

Companies working in isolation will not address the persistent workforce shortage. NASRC's solutions center on a coordinated, industry-wide approach to recruitment, training, and retention. Our strategy focuses on filling training gaps and growing the technician workforce to prevent training gaps or technician shortages from further preventing the transition from HFC refrigerants.

## OUR PROGRESS IN 2023

### Workforce Development

- Published Workforce Development Assessment Report summarizing data-driven solutions to grow the refrigeration technician workforce.
- Leveraged report findings to build a comprehensive workforce development program to recruit, train, and retain a sustainable technician workforce.

### School Support

- Launched a new membership program for HVACR schools and strengthened NASRC's network of educational stakeholders.
- Secured a grant to develop a program to train HVACR instructors and equip faculty to incorporate naturals into their curriculum.

### Technician Training

- Launched the first-of-its-kind Natural Refrigerant Training Summit to train refrigeration technicians on the latest natural refrigerant technologies (see next page).
- Coordinated additional on-site and virtual CO2 training programs with partners.

### Student Networking

- Hosted two networking sessions to connect HVACR students and faculty with industry stakeholders and increase exposure to natural technologies (see next page).

[CLICK HERE to view the Workforce Development Report](#)

# Natural Refrigerant Training Summit

In 2023, we launched the **first-of-its-kind** Natural Refrigerant Training Summit series. These events provide **free training** for refrigeration technicians on the latest CO2 and propane technologies.

Participating technicians accessed concurrent training sessions from multiple manufacturers and industry experts. Each Training Summit featured a networking session with local HVACR students and faculty to increase exposure to natural technologies and build industry connections.

Visit [nasrc.org/training](https://nasrc.org/training) to learn about upcoming Training Summits.

## STATS FROM THE 2023 SUMMITS

**2** Training Summits  
IRWINDALE, CA and ST. LOUIS, MO

**485+** Technicians  
TRAINED

**170+** Students & Faculty  
from 25 schools  
PARTICIPATED

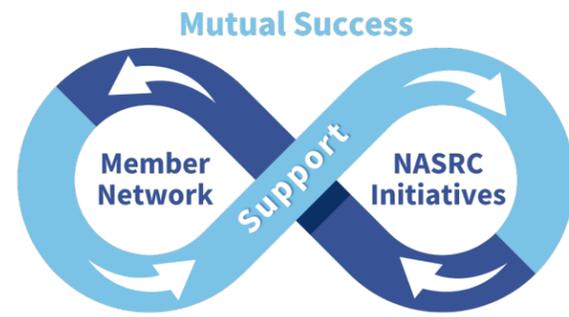
**40+** Different Training  
SESSIONS



## Successful Together: Your Success is Our Success

NASRC members make up a robust network of experts from across every sector of the grocery refrigeration industry, and their support makes all of our work possible. Our members comprise the **leading community of refrigeration industry stakeholders** who are making progress for the entire industry. How do we measure success? Our members' success is our success.

See a complete list of 2023 NASRC members at the end of this report.

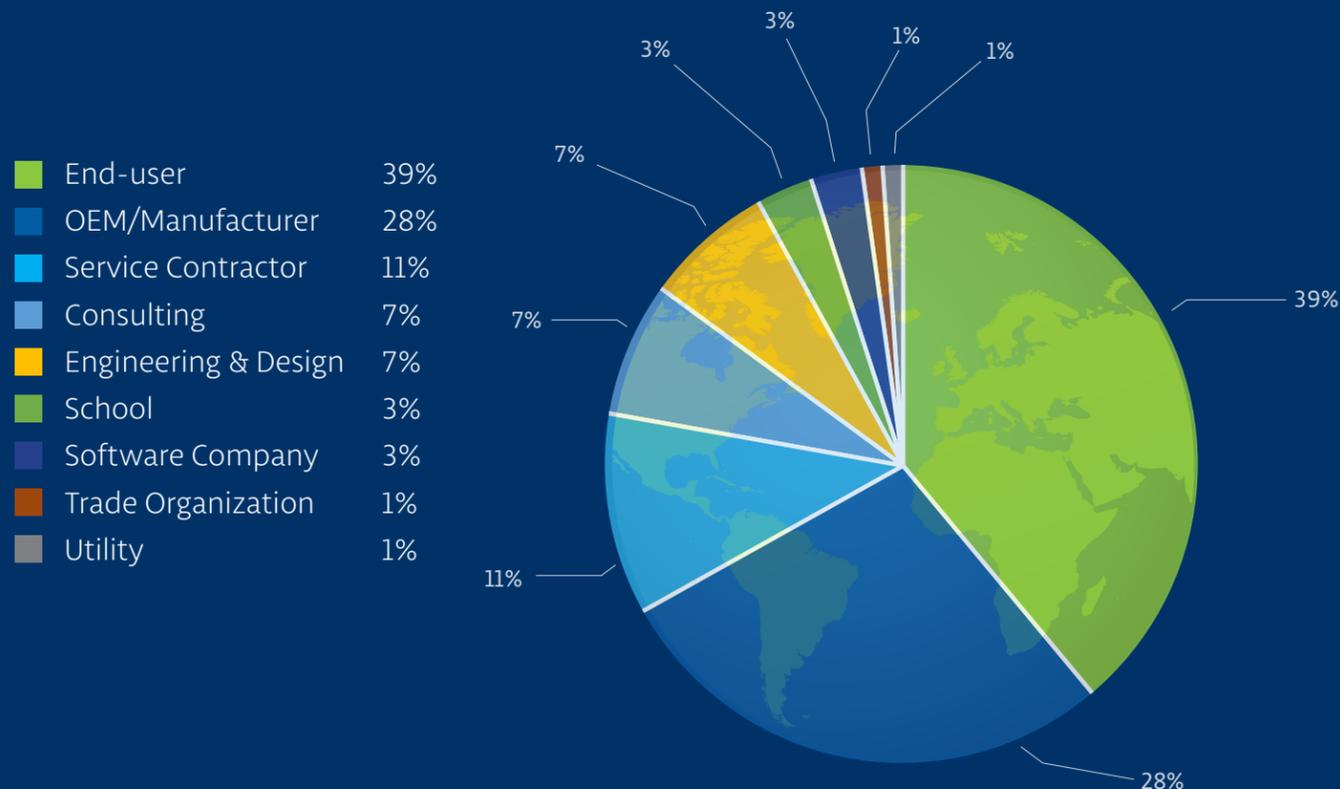


## 2023 NASRC MEMBERSHIP

**160+**  
Member  
Organizations

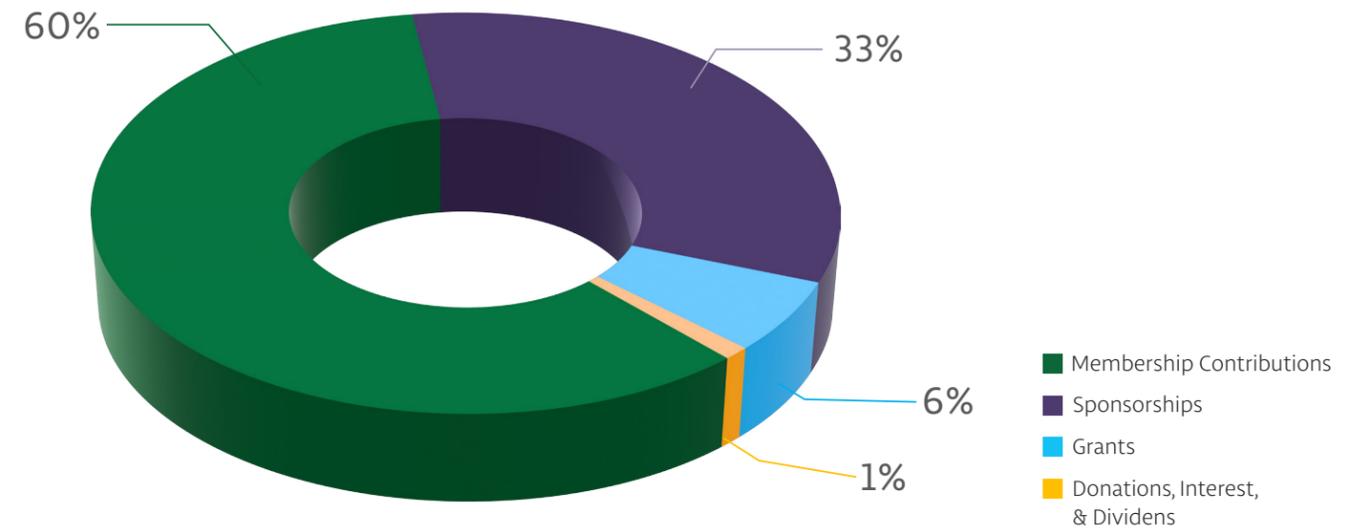
**55,000+**  
Food Retail  
Locations

## 2023 MEMBERSHIP BY TYPE

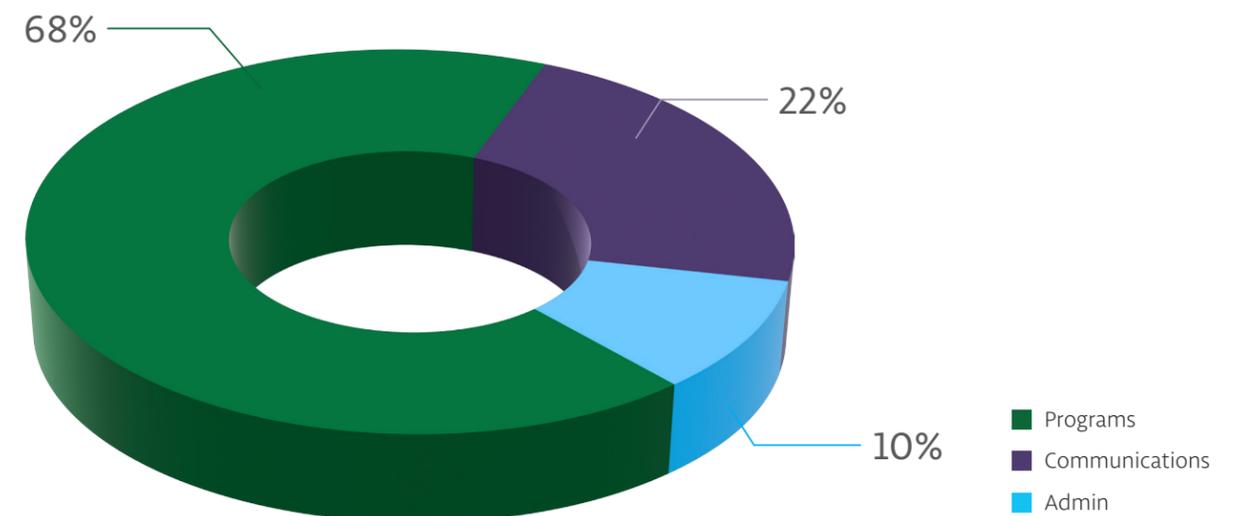


## 2023 FINANCIAL OVERVIEW

### 2023 Revenue



### 2023 Expenses



# Our Esteemed Members

Thank you to our 2023 members!  
None of this would be possible without your support.

## TITANIUM MEMBER



## PLATINUM MEMBER



## GOLD MEMBER



## END USER

Ahold Delhaize  
Alameda Natural Grocery  
Albertson's  
ALDI  
Arizona Grand Resort  
Ashland Food Coop  
Bashas  
Boulder Organic Foods  
Brattleboro Food Coop  
BriarPatch Food Co-op  
Brookshire Brothers  
Campbell Soup Company  
Chavez Supermarkets  
Coborn's Inc.  
Cook County Whole Foods Co-op  
Costco  
Draeger's Supermarkets  
East Aurora Co-op Market  
Elephants Delicatessen  
Giant Eagle  
Grocery Outlet  
Hannaford  
Harmons Grocery  
Harp's Food Stores  
Harris Teeter  
H-E-B  
Holiday Market  
Kwik Trip  
Loblaws  
Longo's  
Lowe's Market  
Mom's Organic Market  
National Co-op Grocers  
Nature's Path Foods  
New Leaf Markets  
New Seasons Market  
Nugget Market  
Palace Market  
Park Slope Food Coop  
PCC Community Markets  
Publix Super Markets  
Raley's Family of Fine Stores  
Red Bull North America  
Rouses Markets  
Sprouts Farmers Market  
Stater Bros. Markets  
Sugar Creek Packing Co  
Target  
The Fresh Market  
The Kroger Co.  
The North West Company  
Tops Markets  
Town & Country Markets  
United Natural Foods  
Vallarta Supermarkets  
Walgreens  
Walmart  
Weis Markets  
Whatley Convenience Stores

Whole Foods Market

## SERVICE CONTRACTOR

Accutherm Refrigeration  
Arctic Cooling Systems  
Classic Refrigeration SoCal, Inc.  
■ **Climate Pros**  
Compass Refrigeration  
■ **CoolSys**  
Crosby-Brownlie, Inc.  
Fazio Mechanical Services  
Key Mechanical  
Lovelight Solutions  
Montana Refrigeration  
Omni Mechanical Solutions  
Refrigeration Systems Construction & Service Co.  
■ **Remco, Inc.**  
RMC Refrigeration  
Smart Care Solutions  
■ **The Arcticom Group**

## SCHOOL

HVACRedu.net  
Mt. San Antonio College  
Plumbers & Pipefitters Local 562 Training Center  
Steamfitters Local 449 Technology Center  
U.A. Plumbers & Steamfitters Local 22 Training Center

## ENGINEERING & DESIGN

Benchmark Group  
Cushing Terrell  
■ **DC Engineering**  
Emanuelson Podas  
Energy Efficiency Services (e2s)  
Enreps LLC  
Henderson Engineers  
kW Engineering  
■ **SEER2**  
VaCom Technologies

## CONSULTING

Certified Energy Consultants  
CLEARresult  
DNV  
■ **Effecterra**  
PSD Associates  
Refrigerant Management Solutions  
Taper  
Therm Solutions, Inc.  
Tradewater  
VEIC

## OEM/MANUFACTURER

■ **AHT Cooling Systems USA, Inc**  
■ **Alfa Laval Inc. US**  
Area Cooling Solutions  
Arneg  
■ **Baltimore Aircoil Company**

■ **BITZER Canada Inc.**  
■ **BITZER US**  
■ **CAREL USA**  
Carlyle Compressor  
■ **Carrier Commercial Refrigeration**  
■ **Copeland**  
■ **Danfoss**  
■ **Embraco**  
■ **Energy Recovery**  
Evapco LMP  
■ **Frascold USA**  
Fusion Cooling  
■ **Güntner US**  
Heat Transfer Product Group  
Heatcraft Refrigeration Products  
■ **Hillphoenix**  
■ **Howe Corporation**  
■ **Hussmann**  
KE2 Therm Solutions  
■ **Kysor Warren**  
■ **LEER INC.**  
■ **Lowe Corporation**  
M&M Carnot  
Matelex  
■ **Modine Climate Solutions**  
MSA Safety  
Nitto  
■ **Officine Mario Dorin**  
■ **Parker Sporlan**  
■ **Phononic**  
■ **Rivacold America**  
■ **Secop**  
Tecumseh Products Company, LLC  
■ **Temprite**  
■ **True Manufacturing**  
■ **Viessmann Refrigeration Solutions US**  
■ **Zero Zone, Inc.**

## UTILITY

■ **Southern California Edison**

## TRADE ORGANIZATION

ConnexFM  
HARDI

## SOFTWARE COMPANY

Axiom Cloud Inc.  
Bueno  
ServiceChannel  
Trakref

## Membership Levels

■ Titanium ■ Gold  
■ Platinum ■ Silver



### **The North American Sustainable Refrigeration Council (NASRC)**

The NASRC is a 501(c)(3) environmental nonprofit working to advance climate-friendly natural refrigerants and reduce greenhouse gas emissions caused by traditional hydrofluorocarbon (HFC) refrigerants. We collaborate with stakeholders from across the industry, including over 55,000 food retail locations, to eliminate the barriers to natural refrigerants in supermarkets.



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