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**ANNUAL REPORT**



**REFRIGERANT EMISSION  
ELIMINATION FORUM**

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# Where are your refrigerants?



**Aleisha Khan**  
Executive Director, REEF

Dear Community,

You may remember a PSA that ran on TV from the late 1960s through the 1990s. “Do You Know Where Your Children Are?” aired nightly around 10 PM and curtailed unsupervised neighborhood playtime in communities across the US, certainly in my Chicago suburb. I think of that often when I have conversations about refrigerants: “Do you know where your refrigerants are?” Reactions are usually some variation of “Why are you asking?” or “I think we have those somewhere.” Unfortunately, refrigerants are too important to go missing.

In late 2022, amid growing concern over the need for a successful market transition away from HFCs, despite the Kigali Amendment and the U.S. AIM Act, a diverse group of

industry, non-profits, and corporate end users came together. If building owners and operators – the decision makers on purchasing and servicing HVAC – were not represented, the transition away from these super pollutants would not be successful. The voice of these end users to inform policy that works, technology that meets corporate decarbonization goals, and services that generate cost savings is powerful. No existing group was representing building owners and driving collective action.

As a result, REEF was founded with a mandate to coordinate the collective voice of businesses, governments, and other end users seeking solutions. In the short time following its formation, REEF has punched above its weight by leveraging a powerhouse Board of Directors and focusing on large, often global, owners of real estate to quickly address a critical gap in climate solutions by scaling up action on refrigerants. Our early successes in building partnerships to produce new resources, provide needed education and convenings, and aggregate the voice of building owners to influence policy has been encouraging and exciting, but there is more work to do and REEF is positioned to meet the challenge.

Our momentum is real—but so is the work ahead. Our work is built on a simple belief: procurement power can transform the refrigerant landscape. Through collaboration with public agencies, corporate sustainability leaders, technical experts, and you as part of our community, we can turn an overlooked emissions source into one of the most actionable levers for climate progress.

In 2026 we will expand education, deepen implementation support, and work toward ensuring that the benefits of cleaner cooling reach every community.

Thank you for your leadership and belief in the power of collective climate action.

*With gratitude,*

Aleisha Khan  
Executive Director, REEF

# Board of Directors & Officers



**Tristam Coffin**  
*Chairman*

Tristam is Co-Founder and President at effecterra, inc., a Public Benefit Corporation providing sustainability technical support to companies, investors, government entities and their partners. Prior to effecterra, he was implementing sustainability and environmental initiatives as Director of Sustainability & Facilities for Whole Foods Market. He is a LEED AP and sustainability leader with expertise in multiple areas including high performance buildings, advanced refrigeration/HVAC systems, renewable energy, and waste diversion. He also co-founded the North American Sustainable Refrigeration Council (NASRC).



**Zoë Dawson**  
*President*

Zoe holds over two decades of experience advancing energy efficiency, decarbonization, and refrigerant management initiatives. She serves as the Technical Sustainability Program Leader at effecterra, inc., helping industrial, institutional, and commercial clients achieve sustainability goals through strategic refrigerant asset management planning and implementation. Prior to effecterra, Zoe spent over a decade at VEIC leading statewide energy efficiency programs and utility-led R&D pilots focused on optimizing energy use, reducing energy burdens for low-income customers, and advancing emerging technologies.



**Kristen Taddonio**  
*Director*

Kristen is a dedicated climate and energy efficiency professional specializing in reducing refrigerant emissions and helping people save money while protecting the planet. Her decades of experience span public and private sectors, including leading commercial building energy efficiency partnerships at the U.S. Department of Energy, heading sales and marketing for Energy Star appliance programs, reducing refrigerant emissions at the U.S. Environmental Protection Agency, serving as senior climate and energy advisor at the non-profit IGSD, and consulting on Montreal Protocol Kigali Amendment HFC phase down implementation in developing countries for the World Bank.



**Pooya Soltanian**  
*Director*

Pooya is a Professional Engineer and Certified Project Manager with 7+ years of experience leading large-scale construction, retrofit, and decarbonization initiatives across industrial, retail, and data center sectors. Pooya serves as a Construction Project Manager on the Yale University Capital Program team working to improve infrastructure and facilities. In his previous role at IKEA North America, he managed portfolio-wide sustainability projects from HVAC electrification and energy storage to solar PV and EV infrastructure while advancing IKEA's carbon neutrality roadmap. With expertise in LEED, Net Zero Carbon design, and regulatory compliance, Pooya brings a systems-level approach to infrastructure decarbonization.



# Board of Directors & Officers



**Mike Armstrong**  
*Director*

Mike is the President and Managing Director of A-Gas in the Americas where he is responsible for strategy development, business execution, and technology deployment. Mike assumed his current role in 2017 after previously joining the Americas team in 2016 as the first Chief Operating Officer. Mike has also served for 15+ years in Engineering, Commercial, and Operational leadership roles with Linde, a global leader in the industrial gas market. Mike served 6 years as an active-duty Army Officer in Europe and the United States and holds an MBA from Northwestern University and a B.S. from the U.S Military Academy at West Point.



**Heather Clark**  
*Director*

Heather led the all-of-government mobilization to transition the U.S. building sector to zero emissions as Senior Director for Building Sector Climate Policy at the White House under the Biden Administration—advancing federal investments and partnerships to create clean manufacturing jobs and transform our built environment. Heather has also been at the forefront of some of the most innovative decarbonization projects in the U.S., from her leadership at RMI on the Inflation Reduction Act and her work at Biome Studio where she pioneered ambitious decarbonization and clean energy projects to benefit underserved communities.



**Stet Sanborn**  
*Director*

Stet is an award-winning designer and nationally recognized thought leader at the intersection of architecture, engineering, and climate action. He serves as the Director of Climate IMPACT at SmithGroup, where he leads a national, transdisciplinary team focused on Performance, Analytics, Sustainability, Climate Resilience, and Decarbonization. With a dual background in mechanical engineering and architecture, Stet brings a unique, systems-level perspective to the challenge of eliminating building emissions. Stet is a passionate advocate for Net Zero Energy and Net Zero Carbon buildings, and a leading voice in statewide electrification and decarbonization efforts. Through his work, Stet continues to advance bold, pragmatic strategies to eliminate refrigerant and building emissions, helping the shift toward a restorative, fossil-free national future.



**Ramé Hemstreet**  
*Director*

Ramé is a senior adviser to Kaiser Permanente's SVP of Facilities, overseeing infrastructure projects, reducing total cost of ownership, and advancing sustainability initiatives. As Chief Energy Officer, he leads the organization's energy and water strategy, driving efficiency, resiliency, and carbon reduction—culminating in Kaiser Permanente's carbon-neutral certification in 2020. Previously, Ramé served 29 years in the U.S. Navy, concluding as Commanding Officer of Naval Facilities Engineering Command Washington, D.C. He holds advanced degrees from UC Berkeley, the National War College, and Tulane University, along with executive training from Harvard and UVA Darden Business School. A licensed engineer and certified energy manager, he sits on UC Global Climate Leadership Council and was Healthcare Design Magazine Owner of the Year in 2021.

# Board of Directors & Officers



**Behzad Torabifar**  
*Director*

Behzad is PE, Executive Director and Head of Site Services Sustainability at Genentech, leading the implementation of company sustainability goals in alignment with Roche's 2029 and 2045 environmental commitments. He is a licensed Professional Engineer, Project Management Professional, and Certified Energy Manager, and he holds advanced degrees in Civil and Environmental Engineering and a Master's in Sustainability Management from Columbia University. With 20+ years of experience in engineering and sustainability, Behzad is known for translating vision into measurable results through innovation and collaboration.



**Ethan Arbiser**  
*Director*

Ethan is a Senior Energy & Sustainability Manager at CBRE, where he leads broad portfolio-wide initiatives focused on carbon reduction strategy, energy efficiency, and sustainability project execution across commercial real estate. Before joining CBRE, Ethan held analytical roles focused on leveraging Scope 1, 2, and 3 emissions data, as well as water and waste metrics, to support corporate sustainability and ESG strategies across various industries.



**Todd Mansoor**  
*Treasurer*

Todd is a VP at BluePath Finance, where he leads the Project Finance team in structuring, underwriting, and performing due diligence for all of BluePath's energy efficiency and behind-the-meter distributed generation projects.



**Bailey Goldberg**  
*Secretary*

Owner of Broadleaf Law PLLC, Bailey has extensive experience advising clients on complex estate and tax planning, entity formation, and transactional matters.



**Jesse D. Palmer**  
*Legal Counsel*

Jesse is an attorney, activist, and longtime advocate for nonprofit and community-based institutions with decades of professional and lived experience in collective governance and community-centered development.

# About REEF



REEF is a California-based 501(c)(3) nonprofit. We are advocates and accelerators. Our coalition of building owners and operators seeks to reduce the climate impact of refrigerant emissions, going beyond regulation, as part of sustainability and decarbonization goals. We partner with sustainability leaders, manufacturers, policymakers, and researchers to adopt low to no-GWP refrigerant solutions and effective management practices across commercial and institutional HVAC systems. By connecting purchasing influence with technical solutions, we convert commitments into measurable climate impact.

## Mission

We inspire and drive business action on refrigerant emissions, as a means to transform the broader refrigerant landscape toward zero climate and environmental impact.

## Vision

We envision a world in which there is near-zero climate and environmental impact from refrigerants.

# The Challenge and REEF's Response

## Why refrigerants?

In Project Drawdown's 2020 [report](#) outlining climate solutions for this decade, refrigerants came out ahead – that is, they offered the greatest opportunity to mitigate CO<sub>2</sub>e. To reach zero emissions, the industrial and building sectors can achieve reductions between 101.3 GT and 108.3 GT (CO<sub>2</sub>e) through action taken on refrigerants between 2020-2050. Furthermore, in the two scenarios presented by Project Drawdown, refrigerants (both management and alternatives) are the highest and third highest ranking solutions, respectively. Unfortunately, refrigerant gases are the world's fastest-growing category of greenhouse gases. Despite progress under the Kigali Amendment and AIM Act, and proven solutions, action on refrigerants remains too slow to meet climate targets.

Global demand for cooling is expected to triple by 2050

**3x**

In the U.S, the installed refrigerant bank is set to double by 2050, growing to

**6.9 billion tons CO<sub>2</sub>e**

a volume greater than current U.S annual economy-wide CO<sub>2</sub>e emissions

### Did you know?



Many refrigerants currently in use trap thousands of times more heat than CO<sub>2</sub>



Refrigerants are the fastest-growing category of greenhouse gases



Improving refrigerant management could avoid up to 0.5°C of global warming by 2100

Sustainable cooling could cut 2050 global emissions by

**64%**

Sources: <https://drawdown.org/insights/new-epa-coolant-rule-is-a-climate-crisis-no-brainer>; <https://drawdown.org/publications/the-drawdown-review>; <https://eia.org/wp-content/uploads/2022/10/Refrigerant-Lifecycle-FullReport-6Spreads-PRINT.pdf>; The Importance of Lifecycle Refrigerant Management in Climate and Ozone Protection (2024). Sustainability, 17(1), 53.



# The Challenge & REEF's Response

## Our Strategy

REEF convenes and leads a global coalition of building owners and operators to tackle refrigerant emissions head-on. Through peer-to-peer collaboration, REEF helps end users identify shared challenges, accelerate practical solutions alongside innovation, and align around best practices. By coordinating the collective voice of businesses, and other end users, REEF elevates the buyer and operator perspective in policy, industry, and technical forums—driving system-level change. Through education, empowerment, and engagement, REEF turns refrigerant emissions from an overlooked super pollutant into a scalable, profitable climate solution that works in the real world.

### REEF's work centers on three pillars:



#### Education

Bring refrigerants into C-suite discussions and capital expenditure considerations, beyond day-to-day operational use



#### Engagement

Use corporate, market, and policy levers as key entry points to ensure refrigerants are recognized as a critical climate issue



#### Empowerment

Empower building owners to take data-driven action to manage costs, lower risk, and reduce their emissions

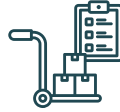
**“For an owner such as Kaiser Permanente that is already on the path to electrification, REEF is helping us tackle the last obstacle to near-zero operational carbon.”**

— Ramé Hemstreet, Senior Advisor to  
SVP of Facilities, Kaiser Permanente

# 2025 Year in Review



**Community  
Building**



**Industry &  
Policy  
Engagement**



**Education &  
Thought  
Leadership**

# 2025 Year in Review



## Community Building

In 2025, REEF launched a newly designed membership and partnership program to expand our network and drive long-term momentum toward an ultra-low GWP refrigerant market. Google joined A-Gas and Hudson Technologies to lead support for our work and our community continues to grow, creating an expanding network of building owner-operators, engineers and architects, and service companies committed to refrigerant action. REEF convened the community at Climate Week in both San Francisco and New York City, and brought together industry leaders for closed-door listening sessions that fostered peer-to-peer engagement. This 2025 groundwork will support a thriving membership community to sustain our 2026 mission-driven work.

### The Barrier

Lack of coordinated demand and funding has limited collaboration across buyers, suppliers, and technical experts seeking refrigerant management solutions.

### REEF's Solution

Build a unified membership network and partnership base that drives aligned action and pooled investment in refrigerant climate leadership.



# 2025 Year in Review



## Community Building

### Key Milestones

**\$150B+**

commercial real  
estate assets  
managed

Engaged owner-operators managing **\$150B+** of commercial real estate assets representing over **10%** of the US commercial real estate market.

**180M+**

sq ft of building  
space

REEF's member community manages **100M+ sq. ft** of office space, **50M+ sq. ft** of medical facilities & **30M+ sq. ft** of retail space.

## Spotlight: Owner-Operator Listening Sessions

REEF hosted Climate Week events in SF (June) and NYC (September). Events included an Innovation Showcase highlighting cutting-edge solutions driving HVAC decarbonization that drew over 380 participants and two closed-door listening sessions that convened 11 corporate leaders to understand hidden challenges and brainstorm strategies for effective refrigerant management.

These listening sessions provided rare opportunities to mobilize peer-knowledge sharing and foster active engagement by bringing together industry leaders who don't often get to sit around the same table. Participants discussed frustrations with the market and flagged opportunities for REEF to surface shared demand signals that inform the HVAC industry, generate market demand, and direct supportive policies.





# 2025 Year in Review



## Industry & Policy Engagement

In 2025, REEF emerged as a credible, end-user driven voice advancing refrigerant and HVAC decarbonization policy and action. Through active participation in the U.S. Department of Energy's Commercial Buildings Heat Pump Accelerator and Ultra-Low GWP Working Group, we brought the end user perspective directly into federal technical and policy discussions. REEF provided technical input to the California Air Resources Board (CARB) and helped to convene high-level refrigerant dialogues alongside the Carbon Containment Lab. We partnered with SPLC, EIA, NRDC and others to advance market transformation for near-zero climate impact refrigerants. Collectively, these collaborations have positioned REEF as a recognized and trusted convener, bridging government, industry, and advocacy to accelerate the transition to lower-emission refrigerant solutions and management best practices.

### The Barrier

Policy and market misalignment continue to slow the adoption of low-GWP refrigerant solutions across the building sector, while insufficient education and tools increase emissions, cost, and compliance risk for owners and operators managing existing equipment.

### REEF's Solution

Build trusted relationships across private sector, government, industry, and advocacy communities to coordinate efforts that manage legacy equipment, drive adoption of new ultra-low non-PFAS refrigerant alternatives, align incentives, and amplify policy leadership.

# 2025 Year in Review



## Industry & Policy Engagement

### Key Milestones

**6+**

*National or  
State Policy  
forums*

Contributed to the **DOE Heat Pump Accelerator, Ultra-Low GWP Working Group, SPLC PCC Working Group, CARB, NESCAUM, and U.S. Climate Alliance** working group dialogues.

**6+**

*peer review  
contributions*

Provided peer review to market transformation road maps and reports developed by **EIA** and **NRDC**, research work by **Yale** and **Columbia**, and purchasing policy by **the State of Maryland**.

Elevated refrigerants to a fundamental pillar of **high-performance building design in LEED v5** by advocating for refrigerant lifecycle management as a core requirement.

**2**

*advocate  
letters*

Initiated a joint advocate letter to California CEC, bringing in other advocate organizations, in support of ultra-low non-synthetic **PFAS free technology solutions**.

Penned a joint letter to **UL, ASHRAE**, and associated **HVAC safety standards committees** advocating for the incorporation of **ultra-low, non-PFAS solutions** in refrigerant standards.

**“REEF’s leadership is reshaping how the HVAC industry thinks about refrigerants—connecting procurement, policy, and innovation in one coordinated effort.”**

— Heather Clark, Former Senior Director, White House  
Climate Policy Office (Biden Administration)

# 2025 Year in Review



## Education & Thought Leadership

2025 marked REEF's debut as an educational and thought leadership hub for climate-friendly cooling. Through high-profile events and its first webinar series, REEF brought together and crowdsourced knowledge from hundreds of experts, policymakers, and corporate sustainability leaders across a wide range of organizations. Complementing these convenings, REEF launched a digital newsletter, an active LinkedIn presence, and an overhauled website to expand reach and engagement. In addition, REEF centralized attention and provided resources that go beyond research and awareness. Actionable guidance and tactical "how-to" tools helped equip stakeholders with the knowledge to embed refrigerant management into sustainability programs nationwide and covered topics from best practices for procurement, innovative HVAC technologies, and model policy language to strategic insights on carbon markets, refrigerant destruction and reclaim, and investment opportunities.

### The Barrier

Many organizations lack practical tools and training to measure, manage, and reduce refrigerant-related emissions.

### REEF's Solution

Equip stakeholders with free resources including actionable education, case studies, and collaborative platforms that translate climate commitments into operational practice.

# 2025 Year in Review



## Education & Thought Leadership

### Key Milestones



Published **REEF Buyer's Principles** to guide member alignment & inform market engagement on refrigerant transition opportunities.

Co-developed the **Sustainable Refrigerant Procurement Guidelines** with SPLC, integrating refrigerant lifecycle criteria with reclaim regulations & GWP limits for new systems.



Co-hosted the **2025 Yale Cooling Conference** with the Carbon Containment Lab (CCLab) to accelerate market demand for **sustainable cooling solutions & scaling of LRM**.

Hosted **Climate Week events** in SF & NY, drawing over **380 participants** for an innovation showcase highlighting cutting-edge solutions driving **HVAC decarbonization**.

## Spotlight: Quarterly Webinar Series

In 2025, REEF provided practical, actionable guidance by launching its first quarterly webinar series. Designed to go beyond the basics, webinars highlighted leading LRM strategies, emerging alternative cooling technologies, innovative refrigerant recovery approaches, and applicable insights for designing HVAC for decarbonization.

The series attracted over 400 registrants with each webinar averaging a 50% attendance rate. Series speakers included representatives from Pascal, Exergyn, FMHero, Tradewater, Hudson Technologies, ME Engineers, Point Energy Innovations, SmithGroup, and A-Gas.

### WEBINAR SERIES

#### Reducing Refrigerant Emissions Through the Power of Procurement

Part I  
October 30  
2-3 pm EDT

Part II  
November 18  
2-3 pm EDT



Check out REEF + SPLC's **Power of Procurement webinar series**

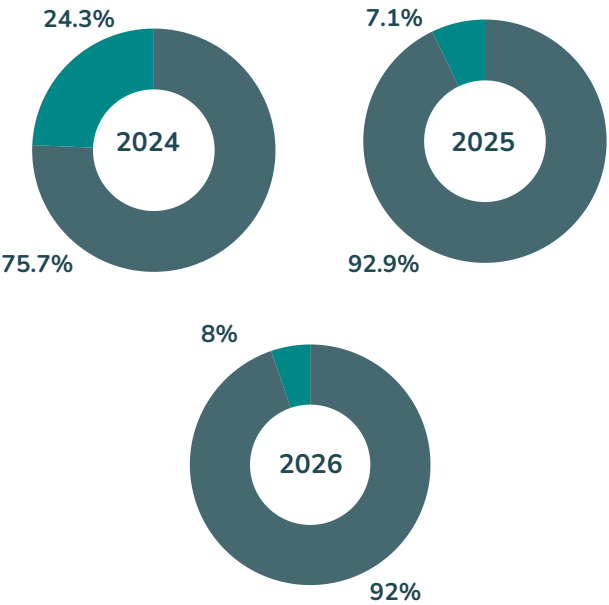


# Financial Overview (FY '25)

## Contributions & Support

From 2024 to 2025, REEF's monetary contributions and support more than doubled, with REEF securing core operational funding from the Energy Foundation to close 2025 on firm financial footing. With a clear trajectory toward membership expansion and diversified funding, REEF expects to continue its strong growth in 2026.

	2024	2025	2026 Goal
Grants	\$50,000	\$154,000	\$400,000
Memberships	\$50,111	\$87,360	\$450,000
Total	\$100,111	\$241,360	\$850,000



## Expenses

REEF's virtual operating model and lean staffing structure enable us to deploy resources with precision, maximizing the impact and cost-effectiveness of every dollar entrusted to us.

- Professional Services
- Administrative & General

# Looking Ahead to 2026



2025 marked a turning point for REEF, as we transitioned from a nascent initiative into a recognized, end-user driven voice in refrigerant and HVAC decarbonization. 2026 will be a pivotal execution year focused on converting REEF's credibility, partnerships, and momentum into measurable, scalable climate impact across the built environment. With new leadership, expanded programs, and deepening partnerships, REEF will shift from primarily building organizational capacity to delivering tangible outcomes that accelerate refrigerant emissions reductions. By the end of 2026, REEF's aim is clear: to make refrigerant management a mainstream climate priority and demonstrate that coordinated, procurement driven action can transform an entire industry.

## REEF is looking forward to:



### Community Building

- Expanding and diversifying stakeholder engagement across all types of owner-operator organizations through targeted outreach and new owner listening sessions.



### Industry and Policy Engagement

- Working with state and local governments to adopt purchasing guidance and regulation that support end users in reducing their climate impact through cooling.
- Convening stakeholders to lead international market transformation for ultra low-GWP refrigerants.
- Uniting the buyers, innovators, and policymakers driving a refrigerant transition that is both equitable and achievable.



### Education & Thought Leadership

- Collaborating with a global real estate owner to develop and demonstrate the roadmap for refrigerant action.
- Developing and publishing case studies and market insights that demonstrate how refrigerant management delivers emissions, cost, and risk-reduction benefits—helping drive broader market adoption.



[WWW.REEFCLIMATE.ORG](http://WWW.REEFCLIMATE.ORG)