



REEF + SPLC Present: Reducing Refrigerant Emissions Through the Power of Procurement

Aleisha Khan

Executive Director
REEF



REEF

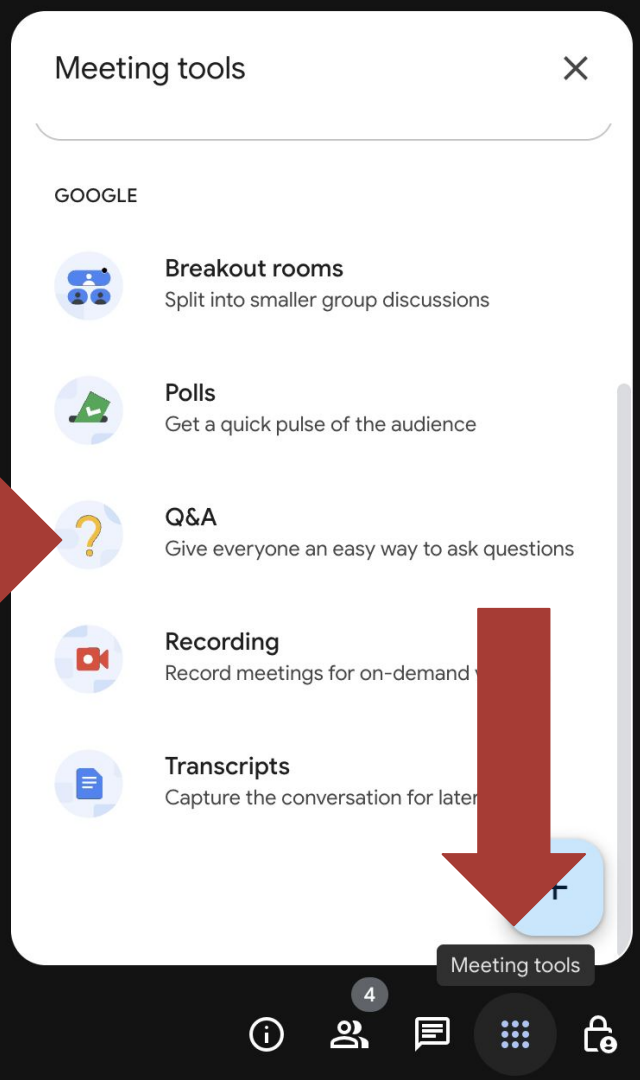
REFRIGERANT EMISSIONS ELIMINATION FORUM



Refrigerant gasses are powerful and overlooked drivers of climate change. They are EVERYWHERE. Collectively, refrigerants are also the world's fastest growing category of greenhouse gases.

Q+A

How to Submit Questions for Moderator and Speakers



Agenda

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1. Welcome & Housekeeping (5 min)
2. SPLC Introduction (5 min)
3. The Role of Procurement in Refrigerant Strategy (10 min)
4. Walkthrough of the New Guidelines + Templates (15 min)
5. Practical Tips & Tricks (10 min)
6. Audience Q&A (10 min)
7. Call to Action & Engagement Pathways (5 min)



Kris Spriano



Tristam Coffin



Liz Swanson

PANEL SPEAKERS

Kris Spriano

Programs Executive
Sustainable Purchasing
Leadership Council



PANEL SPEAKER



SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

The Sustainable Purchasing Leadership Council (SPLC) leads a global community of purchasers, suppliers, advocates and experts dedicated to building a sustainable world through the power of procurement.

Refrigerant Procurement Climate Collaborative (RPCC) Working Group

Co-led by SPLC and REEF

Refrigerant Emissions Elimination Forum (REEF)*	NRDC	Toromont
Effecterra	EIA	IIAR
University of Wisconsin	True Mfg	City of Portland
Tradewater	Glencoe Strategies	DOE
A-Gas	NY DEC	IGSD
Yale Carbon Containment Lab	NREL	Minnesota Pollution Control Agency
Arizona State University	USDA	Hudson Technologies
UCSD	Hennepin County	

Grant funding provided by:



**U.S. ENERGY
FOUNDATION**



OUR GOAL

Provide procurement resources that scale the reduction and avoidance of institutional hydrofluorocarbon (HFC) refrigerants use.

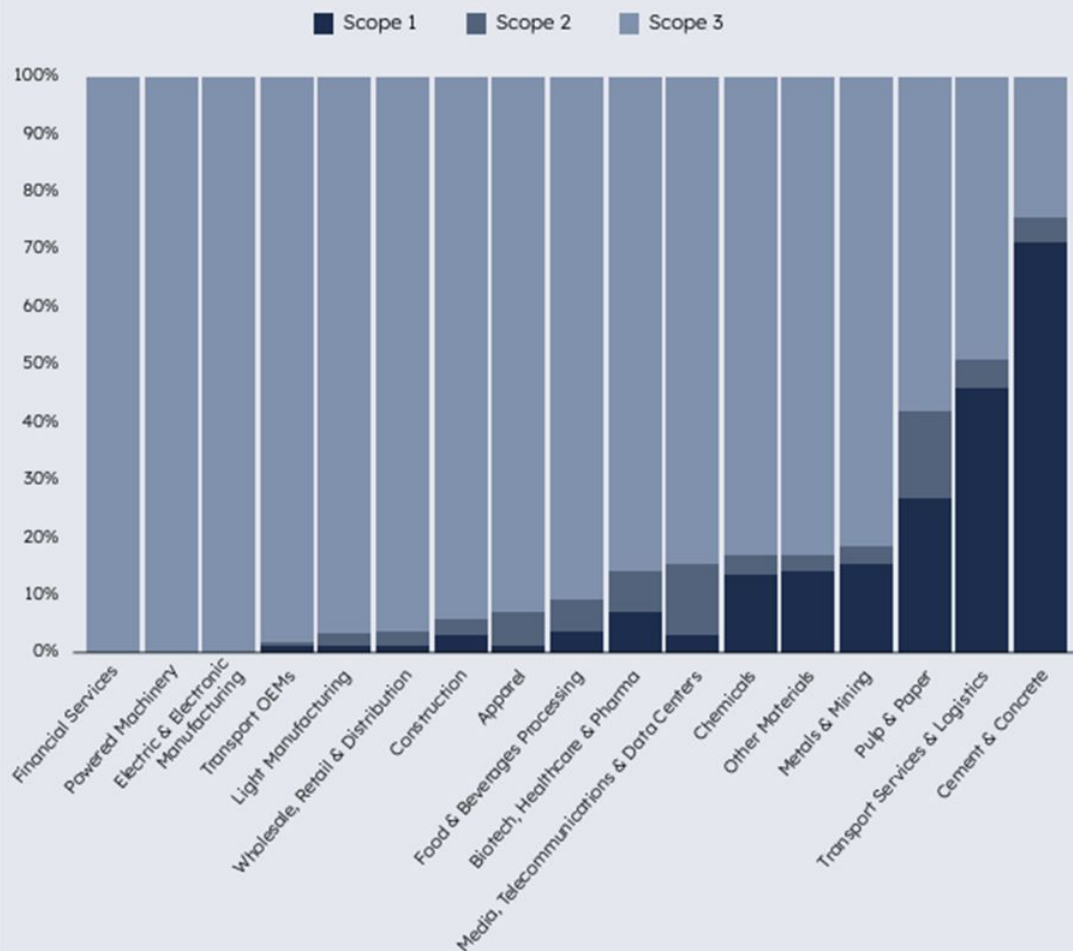
Carbon Emissions by Industry

Scope 3 emissions dwarf Scope 1 and 2 emissions for most industries!

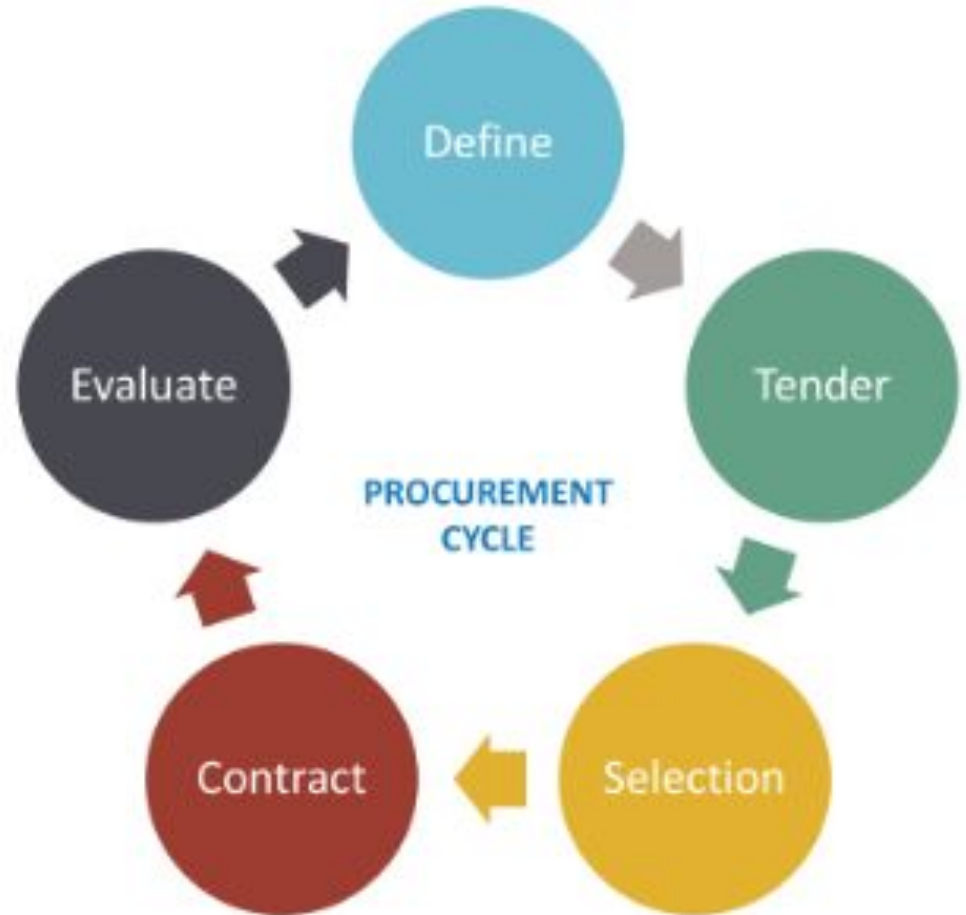
Source: [Trellis - Mastering Scope 3 Emissions: Strategies for Supply Chain Decarbonization](#)

In 2022, Scope 3 GHG emissions represented more than 80% of total emissions for most industries

Global overview of emissions by scope across industries, % of total emissions



Activating
climate-friendly
refrigerants
strategies through
the procurement
cycle!



Tristam Coffin

Chairman of the Board
REEF

PANEL SPEAKER



COMMON REFRIGERANTS IN THE US TODAY



R-22
GWP ~1,800

R-410A
GWP ~2,000



R-1234yf (HFO)
GWP ~1
(used to be ~1,400)



R-134a
GWP ~1,400



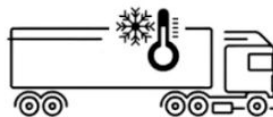
R-410A
GWP ~2,000



R-717, R-404A, R-507, R-134a
GWP 0 - 4,000



R-404A, R-507
GWP ~4,000



R-404A, R-452A
GWP ~2,000 - 4,000



R-22, R-404A, R-507, R-448A
GWP ~1,400 - 4,000

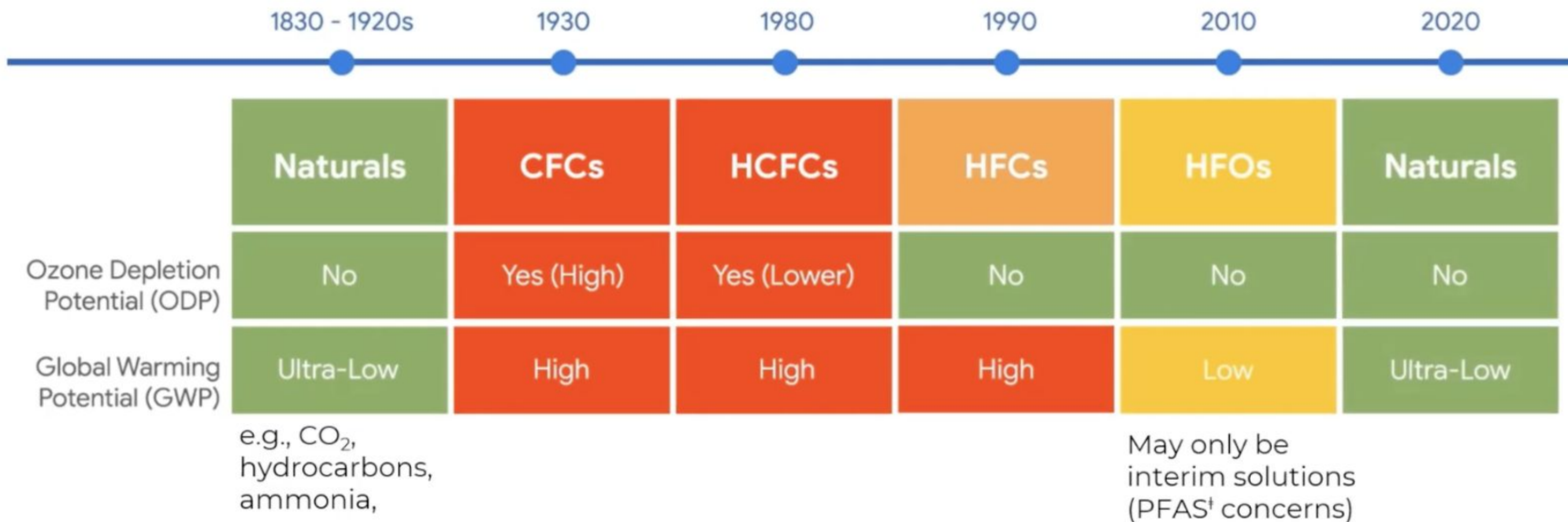


R-22, R-513A
GWP ~630 - 1,800



R-404A, R-507, R-134a
GWP ~1,400 - 4,000

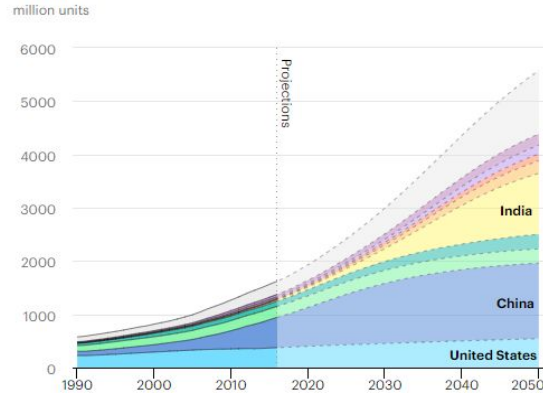
REFRIGERANT EVOLUTION



[†] PFAS stands for per- and polyfluoro alkyl substances. These are a large class (thousands) of synthetic chemicals that are used for various purposes. PFAS are known to be persistent (resist degradation), which is why they are also known as "**forever chemicals**". PFAS are also bio-accumulative and toxic.

Global demand for refrigerants is increasing

Global AC stock, 1990 - 2050



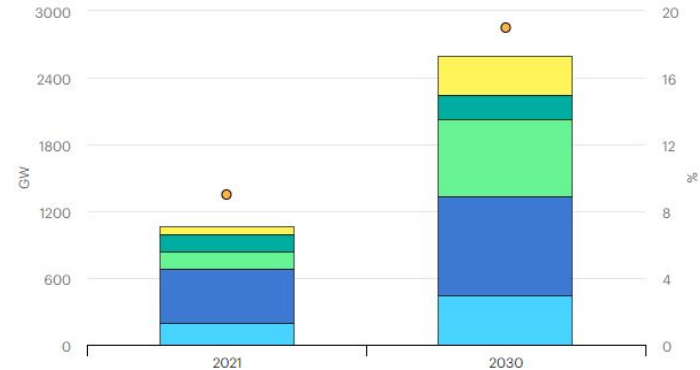
Source: International Energy Agency.

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United States China Japan and Korea European Union India Indonesia Mexico Brazil Middle East Rest of world

3 billion more room air conditioners are expected to be installed globally by 2050

Heat pump capacity in buildings, 2021 - 2030



[The Future of Cooling \(2018\)](#), [The Future of Heat Pumps \(2022\)](#)

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Europe North America China Japan and Korea Rest of world

Share of heat pumps in global heating demand

Building electrification through heat pump adoption is growing need for refrigerants



- **Product Safety Standard**
 - UL 60335-2-40 – AC
 - UL 60335-2-89 - Ref



- **Application Standard**
 - ASHRAE 15



- **Building Codes**
 - State / local level adoption
 - Typically rely on model codes

U.S. Regulations

Refrigerants & technologies are changing



REFRIGERANT POLICY TIMELAPSE



PARIS2015
ON CLIMATE CHANGE CONFERENCE
COP21-CMP11

Kyoto Protocol CMP11
keep Global Warming
"to well below 2 degrees C"



United Nations
Treaty Collection

The Kigali Amendment to
Montreal Protocol
International agreement
to **phasedown**
hydrofluorocarbons (HFCs)



Image source: United Nations



'AIM ACT'
The American Innovation & Manufacturing
Act
Directs EPA to address
Hydrofluorocarbons



EPA ADOPTS HFC REGULATIONS UNDER
THE AIM ACT

2015

2016

2017

2018

2020

2021

2022

SBTI LAUNCH
FOR AMBITIOUS
CORPORATE
CLIMATE ACTION
Science-based emissions
reduction targets



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

'PROJECT DRAWDOWN' PUBLISHED
GLOBAL RESEARCH INITIATIVE
The most substantive solutions
to global warming

DRAWDOWN
THE MOST COMPREHENSIVE
PLAN EVER PROPOSED TO
REVERSE GLOBAL WARMING

US STATES ACT ON HFCs
(following federal rollback)

CA adopts vacated federal rules. Several
states follow suit.
CA adopts and WA, NY propose additional
HFC regulations

**UNITED STATES
CLIMATE ALLIANCE**

**US REJOINS
PARIS AGREEMENT**



**SEC RULES TO ENHANCE &
STANDARDIZE CLIMATE RELATED
DISCLOSURES**

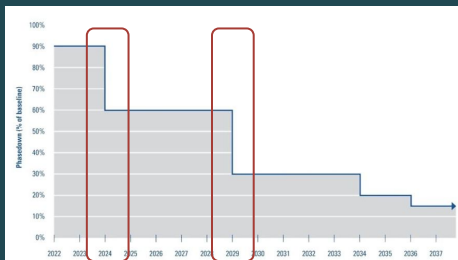


INFLATION REDUCTION ACT
US RATIFIES KIGALI AMENDMENT

Three Legs of the AIM* Act

*American Innovation and Manufacturing Act of 2020, directs EPA to phasedown the **production & consumption** of HFCs by **85% below baseline** levels calculated from 2012-13 data by 2036 (15 yrs)

1: HFC Production Phasedown Began in 2022



Reduces supply of new HFCs
2024 40% reduction

2: Technology transition rules – subsection (i)

Requires new equipment to use lower GWP refrigerants
Began 2025

“TT” Reduces demand for virgin HFCs

3: Emissions Reduction and Reclamation Program – subsection (h)

Covers all RACHP equipment* >15lbs. refrigerant

“ER&R” Addresses management of legacy refrigerants assets

*Does not apply to residential and small commercial RACHP or GWP <53



Liz Swanson

Senior Program Manager
Sustainable Purchasing
Leadership Council



PANEL SPEAKER

Navigating the new toolkit

As its first deliverable, the Refrigerant Procurement Climate Collaborative has published the Sustainable Refrigerant Procurement Toolkit—a set of practical resources to support best practices across the full refrigerant lifecycle. From buying low-GWP equipment to ensuring safe end-of-life disposal, the toolkit helps organizations credibly track and improve their emissions reductions efforts.



Sustainable Refrigerants Procurement Toolkit



Sustainable Refrigerants 1-pager: Reducing Refrigerant Emissions is a Real Win-Win

A summary of why refrigerants matter and how to take action. A great resource for sharing internally with your teams or leadership to make the case for a more sustainable refrigerant management plan.



Climate Friendly Refrigerant Management & Procurement Guidance

The improved and updated full guidance document covers everything you need to know about sustainable refrigerant management, from purchasing to end of life disposal.



Climate Friendly Refrigerant Policy and Specifications

Specific model contract and policy language that can be copied and pasted directly into your organization's procurement policies and/or RFPs.



Climate Friendly Refrigerants Inventory Workbook

Robust workbook designed to help you take inventory of your current refrigerants and identify areas of opportunity for improvement.

Public Website

SPLC Member Page

Climate Friendly Refrigerant Policy and Specifications

These policy measures and procurement specifications will bring you into compliance with U.S. federal requirements and in parts that are noted, go above and beyond. Additional requirements may vary on a state-by-state basis. Please review your state's guidelines and [HFC prohibitions by state and product category](#). Other additions to this policy should be considered depending on organization type, such as U.S. and international refrigerant regulations pertinent to food retailers (which can be found summarized by the Ratio Institute in September 2023 here: ["A Practical Guide to Refrigerant Regulations for Food Retailers"](#)).



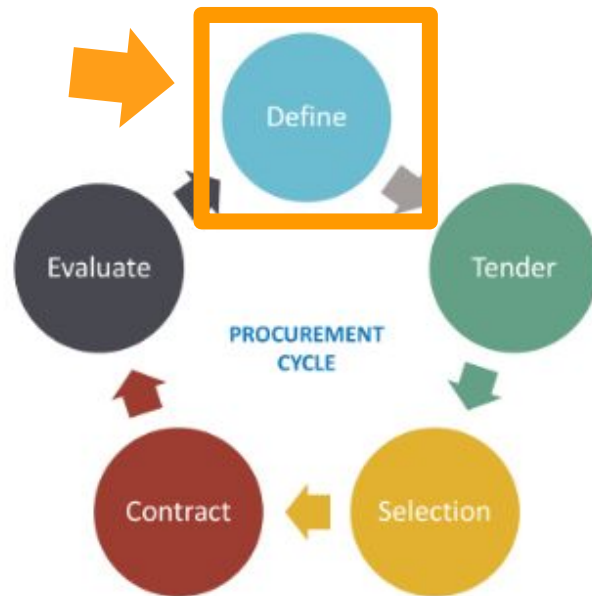
III. Policy Measures

Procurement Specifications:

A. Purchase of Refrigerant and New Equipment

1. [Procure/Provide] P&E that abides by the low global warming potential (GWP) limits by certain dates imposed by the EPA's final Technology Transitions rules published in October 2023 ([summary](#); [final rule](#)). [Procure/provide] products with a lowest GWP to the maximum extent practicable where such products are cost-effective (using life cycle-climate performance (LCCP) – see below) and meet form, function, and utility requirements.
2. Where low-GWP options are not yet available, [procure/provide] reclaimed refrigerant, which is existing refrigerant that has been recovered from equipment at end-of-life and then purified before being reused in new equipment. Reclaimed refrigerant must be from an [EPA-certified refrigerant reclaiming](#). For information specific to alternatives used for retrofitting systems, contact the equipment manufacturer.

Using the toolkit in the procurement process





Tips & Tricks

Getting buy-in for sustainable procurement



Making the Case for Investment
in Your Company's Sustainable
Purchasing Program

Making the Case for Investment in Your Company's Sustainable Purchasing Program

Explores how sustainable purchasing leaders successfully secure investment for their programs by demonstrating their financial value and impact on key business outcomes like revenue and market share.



Galvanizing Action: Strategies
to Maximize Engagement in
Sustainable Public Purchasing

Galvanizing Action: Strategies to Maximize Engagement in Sustainable Public Purchasing

Explores how public-sector organizations can successfully implement and grow sustainable purchasing programs by effectively engaging stakeholders and demonstrating the practical benefits of these initiatives on the front lines, rather than solely relying on executive mandates.

<https://www.sustainablepurchasing.org/sustainability-journey>



Total Cost of Ownership (TCO)

- **DEFINITION:**

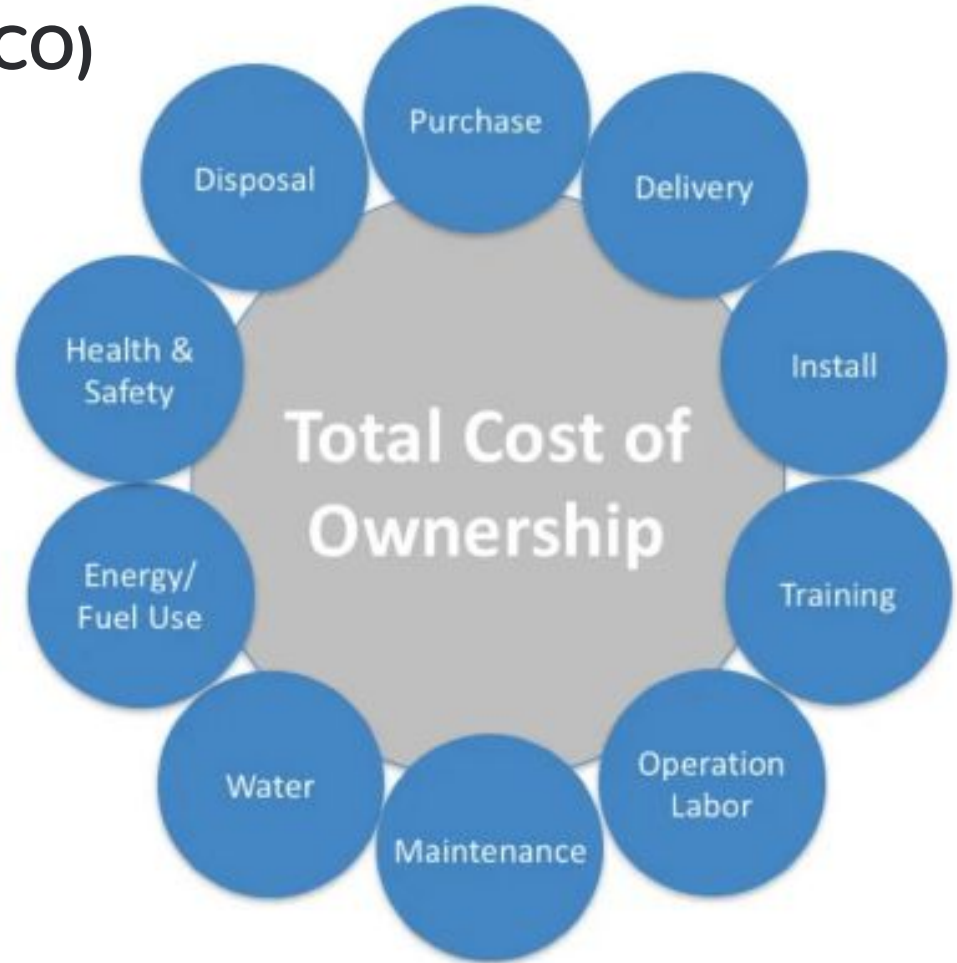
- The initial purchase cost of a product + the total cost of ownership over its lifetime of service

- **APPLICATIONS**

- Appliances, building infrastructure, IT equipment, construction equipment, and vehicles

- **BENEFITS**

- Improved environmental performance, reduced costs over time, improved budgeting process



Five Levers for a Strong Business Case

- — —
- 💰 Cost Savings & ROI
- 📏 Risk Mitigation & Compliance
- ⚙️ Operational Efficiency
- 🌍 Market Incentives & Leadership
- 📢 Brand & Stakeholder Value



Five Pragmatic Best Practices

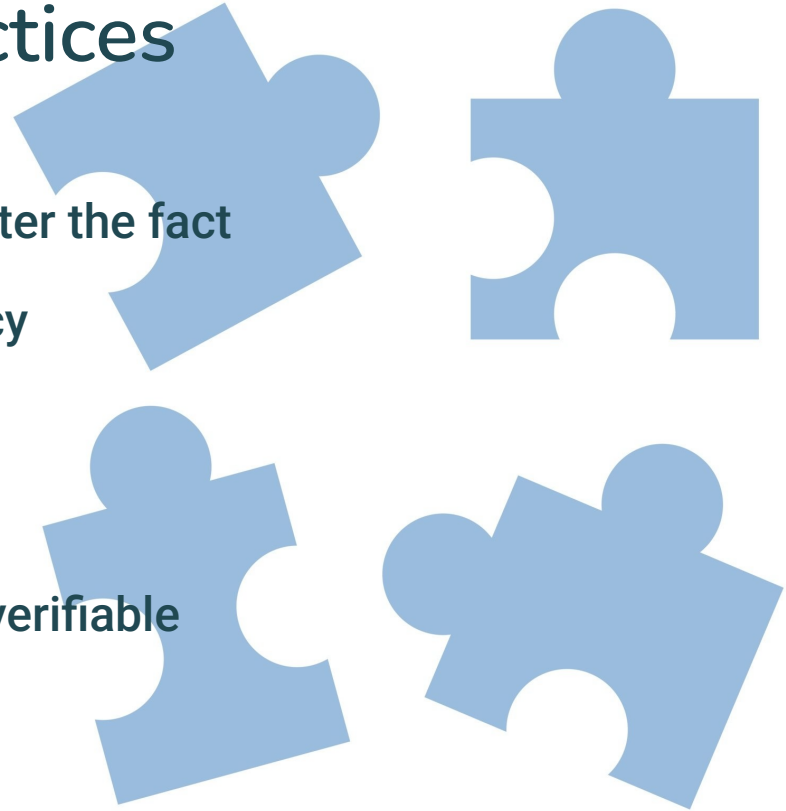
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 Build compliance into contracts, not after the fact

 Equip your team with refrigerant literacy

 Start small, scale quickly

 Leverage shared learning networks

 Make refrigerant progress visible and verifiable

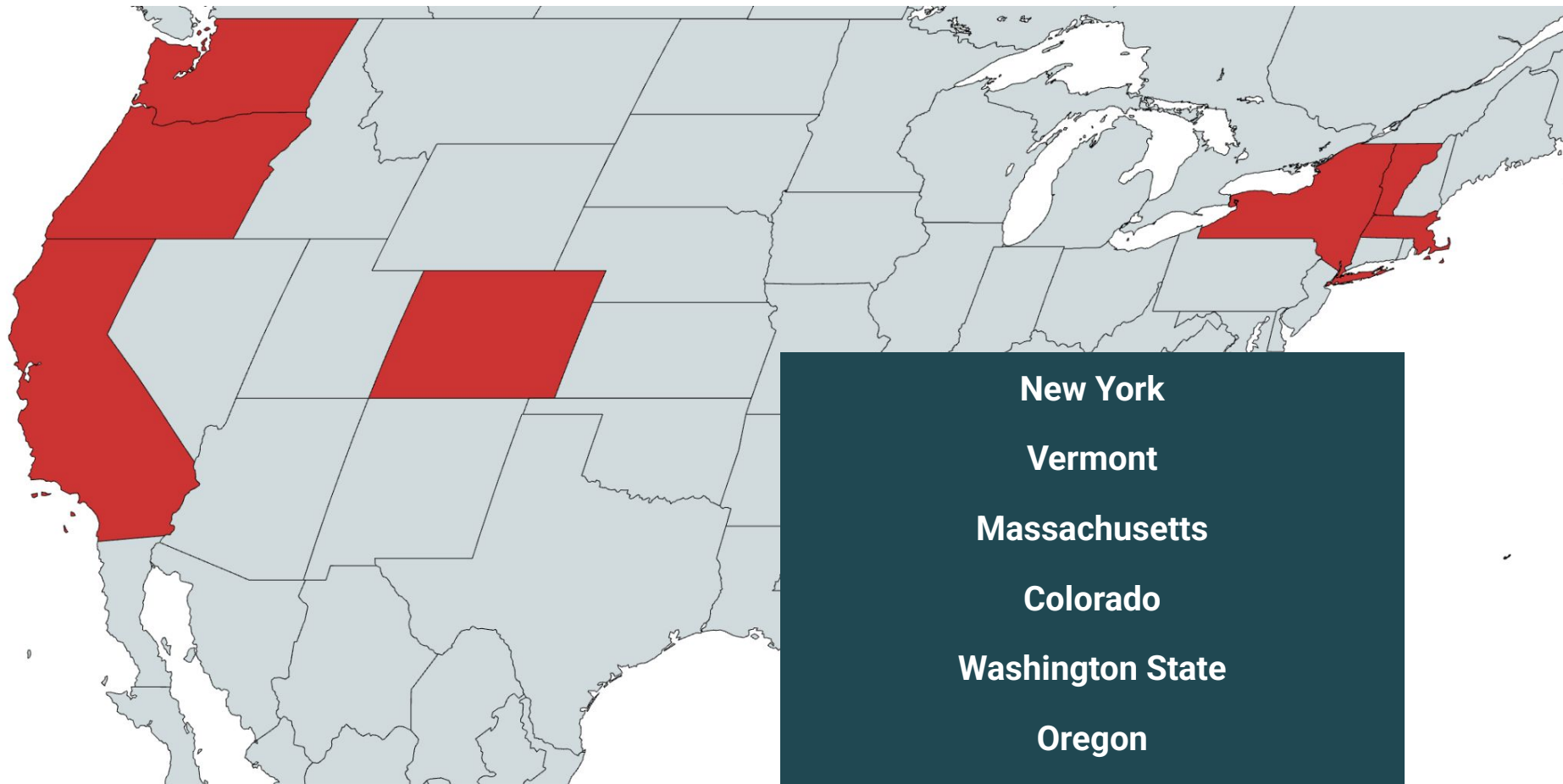


Five Functions of Market Incentives

Current state-level market incentives...

- Subsidize the adoption of sustainable refrigerants
- Support the transition to lower-GWP technologies
- Prime demand for innovative solutions in HVAC systems
- Highlight the importance of localized efforts to foster market readiness
- Provide a roadmap for scaling climate solutions





New York

Vermont

Massachusetts

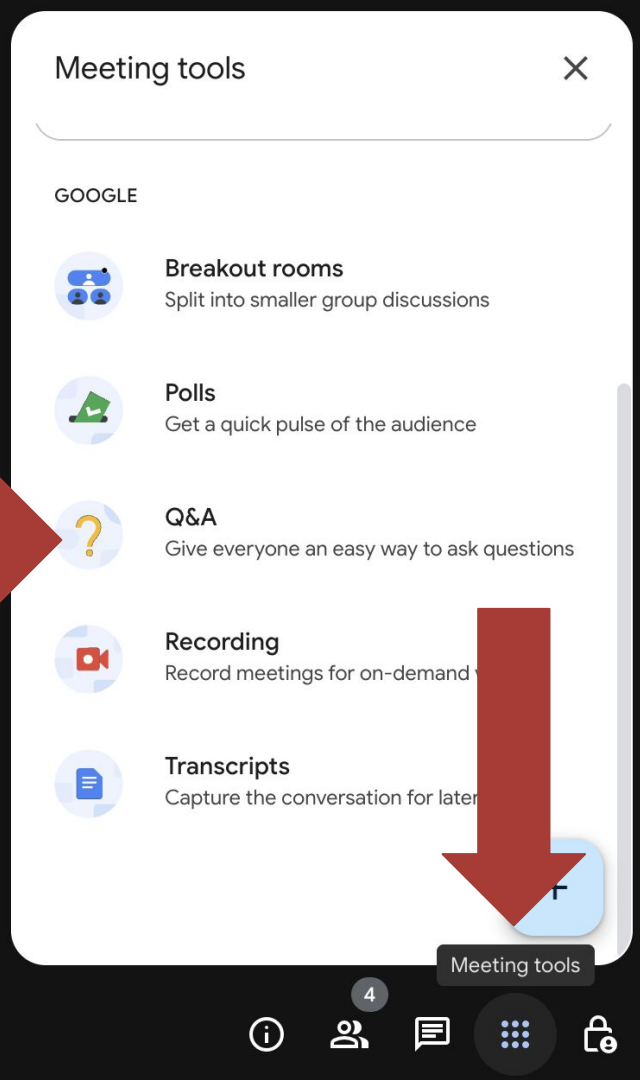
Colorado

Washington State

Oregon

Q+A

How to Submit Questions for Moderator and Speakers



Recommended Next Steps for...YOU!

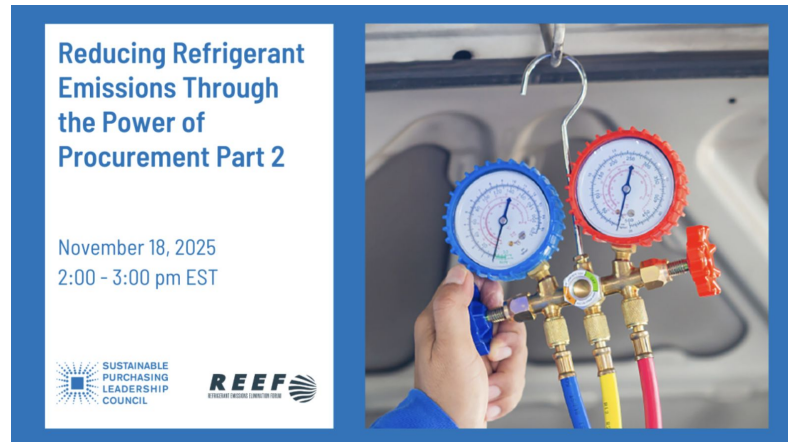
❑ Download the toolkit here:
<https://www.sustainablepurchasing.org/refrigerants-pcc>

❑ RSVP to Part 2 - Early Adopters
<https://luma.com/9htgb2oc>

Email us at

info@sustainablepurchasing.org to:

- ❑ Receive technical support
- ❑ Provide feedback
- ❑ Indicate your interest in joining a “Users Group” for deeper collaboration



REEF - Get Involved

Volunteer

Offer your time and expertise to support REEF initiatives.

Partner

Collaborate with us to amplify REEF's impact.

Donate

Contribute to drive significant changes in the industry.

Membership

Access valuable resources and a network of industry leaders.

contact@reefclimate.org

