



SUSTAINABLE  
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LEADERSHIP  
COUNCIL



# Climate Friendly Refrigerant Management

+ PROCUREMENT GUIDANCE

Version 2.0

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A special thank you to the 15+ organizations who provided an in-depth review of these materials. This group included individuals who are directly involved in the purchasing or specification of HVAC systems and refrigerants such as procurement staff, landlord coordinators, or designers dealing directly with distributors and manufacturers across industries.

# 1

## GETTING STARTED

# Create a Refrigerant Management Plan and Purchasing Policy

Are you ready to take action to reduce your emissions of greenhouse gas (GHG) associated with refrigerants? You've come to the right place! This guidance is designed to help you (1) minimize the climate harm of refrigerants in your existing equipment, and (2) select affordable, energy efficient heating and cooling equipment that uses next-generation refrigerants that are more climate friendly.

### What is a refrigerant?

A refrigerant is a gas or fluid used in air conditioners, heat pumps, and refrigerators to move heat, producing either cooling or heating. As of 2024, the most common refrigerants in use are still hydrofluorocarbons (HFCs). Ozone-depleting hydrochlorofluorocarbons (HCFCs) can still be found in older equipment too. HFCs and HCFCs often have high global warming potentials (GWPs), thousands of times that of carbon dioxide (CO<sub>2</sub>). They are also usually short-lived, so their environmental damage is concentrated in the near-term decades after they are emitted. Scientists have estimated that reducing the production and consumption of high GWP HFCs can mitigate 70–100 billion tonnes of CO<sub>2</sub> equivalent (CO<sub>2</sub>-eq) and prevent up to 0.5 degrees Celsius increase in the Earth's temperature by 2100. Prioritizing energy efficient technologies in the refrigeration and air conditioning sector could potentially double these benefits. Reference: [Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants](#).

### Why do refrigerants matter?

Large climate protection opportunity. According to Project Drawdown, [refrigerant management](#) for existing equipment and [alternative, climate friendly refrigerants](#) in new equipment, if added together, are the #1 climate change mitigation opportunity.

Refrigerants can make or break your organization's GHG goals: Refrigerants are direct, scope 1 greenhouse gas emissions. They must be accounted for when measuring and managing your organization's greenhouse gas emissions, just like direct scope 1 emissions from burning fossil fuels on site. In buildings that use a substantial amount of refrigerant, such as buildings with chillers or VRF systems, refrigerant can account for 50% or more of direct scope 1 greenhouse gas emissions. By ensuring only low GWP refrigerants are purchased when buying new equipment, organizations can dramatically reduce harmful impacts and move closer to achieving GHG reduction goals.

Compliance with the law: Globally, HFC refrigerants are being phased down under the Kigali Amendment to the Montreal Protocol. In the United States, HFCs are being phased down under the American Innovation and Manufacturing Act of 2020. Additionally, several states have regulated and restricted HFC refrigerants. Are you ready?

### Sources of Refrigerant Emissions

The vast majority of refrigerant is used in the cooling sector, for refrigeration, air conditioning, and heat pumps (RACHP). These sectors account for approximately 80 percent of global greenhouse gas emissions from HFC consumption. In corporate and organizational greenhouse gas inventories, common sources of equipment that contain refrigerant include building HVAC systems, building refrigeration equipment, fleets of vehicles, and data centers or closets with cooling needs. Additional sources of refrigerant may include commercial kitchens and smaller pieces of equipment such as refrigerators, freezers, vending machines, and/or water coolers. See figure 1.

In general, the biggest sources of refrigerant emissions include:

- Larger equipment that contains large amounts of refrigerant, or many fittings & connections that may be prone to leaks, such as large commercial refrigeration equipment, chillers, or large variable refrigerant flow (VRF) systems;
- Older equipment, or improperly installed equipment, that has developed leaks. Examples may include rooftop air conditioning systems (RTUs), refrigerated transport units, or older commercial kitchen equipment. A good indication of large refrigerant emissions is if a piece of equipment needs regular “topping up” with refrigerant.

Smaller sources of refrigerant emissions may include:

- Smaller, self-contained equipment with small refrigerant charge sizes.
- Examples include break room refrigerators and freezers, small water coolers, and/or vending machines.

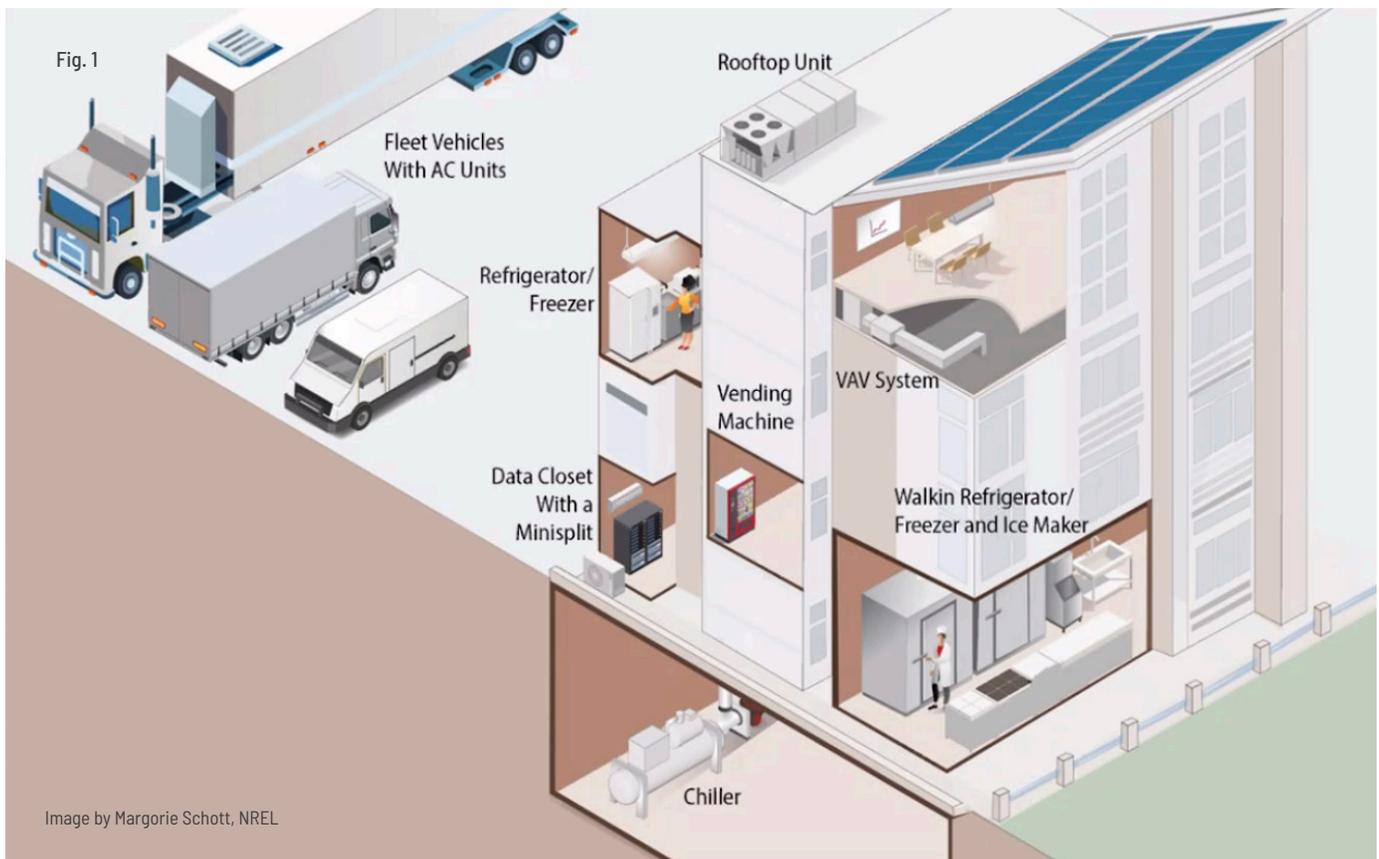


Image by Margorie Schott, NREL

*\*Variable air volume (VAV) is a type of heating, ventilating, and/or air-conditioning (HVAC) system. Unlike constant air volume (CAV) systems, which supply a constant airflow at a variable temperature, VAV systems vary the airflow at a constant or varying temperature.*

### **Refrigerant leaks are an ongoing problem. Lifecycle Refrigerant Management is the solution.**

Many people mistakenly believe that refrigerants are not released until the end of a piece of equipment’s life. This is not true! Refrigerant leaks are an ongoing problem and continual source of emissions, especially for larger types of equipment. For instance, chillers or large commercial refrigeration equipment can leak 10-30% of their initial refrigerant charge size each year (charge size means the quantity of refrigerant a piece of equipment is designed to contain). These “operational” leaks frequently add up to more refrigerant emissions than the refrigerant emitted during installation, replacement, and disposal!

## Create Refrigerant Management Plan + Purchasing Policies

A good refrigerant management plan starts with good data, and consideration of your cooling needs now and in the future. If your organization conducts a greenhouse gas inventory, you may already have a good start on a refrigerant inventory—crucial for refrigerant management—because HFC refrigerants are included in “scope 1” (direct) emissions. To estimate these emissions, one way is to find and analyze purchase orders for re-charging leaky equipment with more refrigerant. Typically, HFC emissions that are already included in your inventory are from large cooling units with charge sizes more than 50 pounds of refrigerant. Note that inventories often overlook emissions sources from smaller cooling units, such as window air conditioners and office refrigerators.

If you do not have a GHG inventory or a refrigerant management plan, please reference the SPLC Refrigerant Inventory Workbook which can be used as a starting point. You can also purchase refrigerant management software available from a variety of vendors (note: SPLC does not endorse any particular product or vendor).

Key elements of a refrigerant management plan include:

1. **Assign responsibility for refrigerant inventory and tracking.** Designate a person or group responsible for inventorying and tracking refrigerant usage. Measuring refrigerant usage will help you better manage your refrigerant emissions.
2. **Set leak prevention goals.** Establish goals to limit refrigerant leakage and communicate these goals to operations and maintenance professionals responsible for refrigerant-containing equipment.<sup>1</sup> Clearly describe who is responsible for identifying refrigerant leaks, and what constitutes unacceptable leakage rates. Monitor progress. For example, best practices are defined in US EPA’s GreenChill [Refrigerant Leak Prevention through Regular Maintenance and Commercial Refrigeration Leak Prevention & Repair](#).
3. **Assign leak repair responsibility.** Clearly articulate under what circumstances leaky equipment should be repaired and under what circumstances it should be replaced with equipment that is energy efficient and uses lower-GWP refrigerant.
4. **Refrigerant purchasing policy: Mandate reclaimed refrigerant.** Make sure the party responsible for refilling refrigerant knows that you want them to use [reclaimed refrigerant](#) to minimize the negative impacts of high-GWP refrigerants. For existing equipment not yet ready to be replaced, opt for reclaimed refrigerant from an [EPA-certified refrigerant reclaimer](#) when servicing.<sup>2</sup> Reclaimed refrigerant is existing refrigerant that has been recovered from equipment at end-of-life and then purified before being reused. This helps prevent atmospheric release of refrigerant from old equipment and displaces demand for virgin refrigerant, thereby minimizing environmental harm. You can currently even earn carbon credits from the American Carbon Registry by using reclaimed refrigerants according to their [Certified Reclaimed Refrigerant Protocol](#).<sup>3</sup>
5. **Equipment purchasing policy: Mandate energy efficient equipment that uses low-GWP refrigerant.** When buying new equipment or replacing old equipment, set clear energy efficiency minimums and refrigerant global warming potential (GWP) limits. Please reference the Policy Measures & Procurement Specifications for specific recommendations and sample language.
6. **Revisit, refine, and reward progress!** Check in at least annually on your refrigerant inventory, updating it to account for equipment and refrigerant turn-over. Refine your plan based on refrigerant emissions results and feedback from within your organization. Be sure to celebrate and reward progress! With dedication, you can significantly reduce your organization’s scope 1 GHG refrigerant emissions.

## | STRATEGY 2

# Buy Energy Efficient, Low-GWP Equipment

Many product categories have a large number of energy efficient, cost-effective, low-GWP options that comply with US and International safety and environmental standards. **Wherever possible, choose equipment certified for high energy efficiency and utilize low-GWP refrigerants.**

### Small HVAC Equipment and Appliances

Use the [EPA Energy Star Product Finder](#) for appliances such as refrigerators, freezers, ice makers, water coolers, window air conditioners, and/or vending machines. Filter the results by “refrigerant type.” Select the box for refrigerant with lower impact on global warming. Most new products are now required to use low-GWP refrigerants under U.S. law, state, and EPA regulations. However, be cautious: avoid getting stuck with older equipment manufactured or imported before the high-GWP refrigerant restrictions applied.



### Medium-to-Larger Residential and Commercial Air Conditioners and Heat Pumps

This category includes equipment such as central air conditioners and heat pumps; packaged rooftop units; water-source and ground-source heat pumps; and other products. It excludes small systems (room air conditioning such as window units, ductless mini split air source heat pumps, or packaged terminal air conditioners commonly found in motel rooms) and very large systems (chillers). Residential and light commercial air conditioning and heat pumps are often distinguished from chillers by the fact that they condition the air directly, rather than cool (or heat) water that is then used to condition air.

After January 1st, 2025, in the USA, it will become illegal under the [EPA's Technology Transitions Rules](#) to manufacture or import most new air conditioners and heat pumps that use a refrigerant with a 100-year GWP over 700, such as R-410A (HFC-410-A). However, there is a “sell through” period, and purchasers may find themselves being offered low-cost older units that use the high global warming potential refrigerants at a discount before they become illegal. Avoid locking in a high GWP refrigerant that will escalate in price and increase your company's emissions. **Ask for equipment that meets the new GWP<700 standard.** For many systems, you can find out what refrigerant they use by looking up the equipment in the AHRI Directory: <https://ahridirectory.org>.

Note that prior to Federal rules, states such as California and Washington enacted similar restrictions on refrigerants that have a 100-year GWP above 750 according to the 4th Assessment Report of the Intergovernmental Panel on Climate Change, so even if Federal regulations waiver, **the state laws remain in place.** In fact, in 2021, the American Heating and Refrigeration Institute (AHRI) [petitioned](#) the US Environmental Protection Agency to expand this prohibition nationwide to provide market certainty for US and other manufacturers.

## Large Commercial or Industrial Air Conditioning Systems (Chillers)

Large refrigeration systems, such as those used in a supermarket, are complex, require more comprehensive reviews of system requirements, and would involve additional internal resources such as facility engineers for decision-making. Chillers typically cool water, which is then circulated to provide comfort cooling throughout a building or other location. Chillers can be classified by compressor type, including centrifugal and positive displacement. Replacing or specifying a chiller for new construction is a major project, generally involving many stakeholders in addition to the procurement official. Under the EPA's Technology Transitions Rules, most newly installed chillers and industrial refrigeration systems will see a refrigerant GWP limit of 700 phasing in from now through 2028:

[epa.gov/climate-hfcs-reduction/technology-transitions-hfc-restrictions-sector](https://www.epa.gov/climate-hfcs-reduction/technology-transitions-hfc-restrictions-sector)

Get ahead of requirements by specifying low-GWP refrigerants today if you are building new or replacing one of these systems. The US EPA has listed several low-GWP refrigerants as acceptable for use in chillers, including water/lithium bromide absorption, R-744 (CO<sub>2</sub>), and several newer refrigerants with GWPs <10. Medium-GWP refrigerants listed as acceptable include R-513A (GWP=572), which is a blend of 56% HFO-1234yf and 44% HFC-134a. Learn more at:

[epa.gov/snap/substitutes-centrifugal-chillers](https://www.epa.gov/snap/substitutes-centrifugal-chillers).

Large refrigeration systems are often subject to enhanced monitoring, leak detection and repair requirements. For the latest information on Federal requirements, refer to EPA's guidance [epa.gov/climate-hfcs-reduction](https://www.epa.gov/climate-hfcs-reduction). Note that states often regulate large systems and have programs and regulations that predate Federal requirements in the USA. For example, [California's Refrigerant Management Program \(RMP\)](#) requires facilities with refrigeration systems containing more than 50 pounds of high-GWP refrigerant to conduct and report periodic leak inspections, promptly repair leaks; and keep service records on site. The regulation also requires service practices intended to minimize refrigerant emissions. Beyond meeting these regulatory requirements, it is best practice to ensure that systems are inspected and that leaks detected and fixed; doing so saves operating costs, saves energy, and can extend the life of equipment.

### Larger Equipment: Additional Resources

Larger systems that require HFCs are complex and require a level of technical expertise that is generally outside of the scope for procurement professionals. Decisions concerning these types of equipment should be made by engineers, facilities managers, and others with the appropriate training. This section contains information that may be useful in understanding these systems and making appropriate procurement decisions.

### Large Supermarket Refrigeration Systems

According to the US EPA, most of the 35,000+ supermarkets in the United States use centralized direct expansion (DX) systems to chill their products.<sup>4</sup> Typically, these refrigeration systems are charged with 3000 – 4000 pounds of refrigerant and can leak more than 20% of their charge each year. Older ozone-depleting HCFC refrigerants (often HCFC-22) are still found in existing systems, and high global warming potential HFC refrigerant blends are commonly found in newer systems.

Fortunately, advancements in refrigeration technology have helped food retailers reduce both refrigerant charge sizes and refrigerant emissions. In new systems, refrigerants such as CO<sub>2</sub>, ammonia, hydrocarbons, and HFOs have potential to be used in commercial refrigeration systems in the U.S. market. Refrigeration systems that use CO<sub>2</sub> as a primary refrigerant are commonly referred to as transcritical CO<sub>2</sub> systems. Recent demonstration projects for utilizing low-GWP alternatives to HFCs presented by the Climate & Clean Air Coalition (CCAC) calculated energy savings of 15 percent to 30 percent and carbon footprint reductions of 60 percent to 85 percent for refrigeration in commercial food stores.<sup>5</sup> For more information on acceptable low-GWP refrigerants, see [Acceptable Substitutes in Retail Food Refrigeration](#) at [epa.gov/snap](https://www.epa.gov/snap).

One of the best ways for supermarkets to learn about how to reduce refrigerant emissions and decrease their impact on the environment is through the EPA's GreenChill partnership program. GreenChill works to help food retailers transition to environmentally friendlier refrigerants; lower refrigerant charge sizes and eliminate leaks; and adopt green refrigeration technologies and best environmental practices. GreenChill's Store Certification Program for Food Retailers recognizes individual stores for using environmentally friendlier commercial refrigeration systems. While GreenChill does not require low-GWP refrigerants to earn the certification, using low-GWP refrigerants is one pathway to earn the Platinum- level certification. Learn more at: [epa.gov/greenchill](https://epa.gov/greenchill).

Food retailers may also wish to download "[A Practical Guide to Refrigerant Regulations for Food Retailers](#)" published by the Ratio Institute in September 2021.

### Large Industrial Refrigeration Systems

While most procurement officials are unlikely to be purchasing large industrial refrigeration systems, SPLC members may wish to note that large industrial refrigeration systems using low-GWP options have been the industry norm for over a century. According to the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (RTOC) of the Montreal Protocol's Technology and Economic Assessment Panel, "Industrial refrigeration systems are used in a wide range of applications globally, applying a variety of refrigerants and technologies for a wide range of temperature levels. In larger industrial refrigeration plants, R-717 (ammonia, GWP=0) has been extensively used for more than 150 years. Current technological advances enable the use of low charge R-717 systems, as well as cascade systems using R-717 together with R-744 (carbon dioxide, GWP=1) opening up new opportunities...The industry has learned to work safely with R-717 by proper education and training. Accidents are less likely to happen when safety procedures are followed." Additionally, the Montreal Protocol RTOC notes that "Large size heat pumps are gaining market acceptance due to increased knowledge of the relevant technology benefits. There are several industrial processes where cooling and heating are needed at the same time, for example the dairy industry. These cases demonstrate how to fully use the potential of cooling and heating capabilities of heat pumps simultaneously."<sup>6</sup>

## | STRATEGY 3

### Drive the Market

**Communicate your new demand for energy efficient products using low-GWP refrigerants to your suppliers, and insist on reclaimed refrigerant from a [certified refrigerant reclaimer](#) to service existing equipment.** In some cases, government or other institutional purchasers may help suppliers offer more low-GWP choices by coordinating with state and local authorities to remove barriers. For instance, adopting the latest building codes and standards may help remove outdated requirements and ensure safety when installing newer low-GWP equipment. Adopting ASHRAE 15-2019 into building codes and recognizing UL 60335-2-40 3rd edition, as Washington State has done, can enable the use of lower GWP refrigerants sooner. Collaborate with your suppliers to find creative solutions to any barriers that arise – this can accelerate the transition away from high-GWP HFCs.

By adopting similar organizational policies and aggregating demand that drives equipment and cooling costs down, governments and other institutional purchasers send a market signal that may drive market transformation. Bulk purchases by large organizations (e.g. government agencies, buyers clubs, or other enterprises) can often result in discounts that help justify the purchase price of new equipment. Purchasers can work with suppliers to negotiate bulk purchase discounts.

In addition, on the horizon are innovative "alternative cooling technologies" that do not use vapor compression systems at all to deliver cooling. You can also consider passive cooling approaches such as designing buildings to reduce the need for cooling load with better insulation, shading, green roofs, natural ventilation, etc. These approaches can bring down costs emissions significantly.<sup>4</sup>

## Insist on Proper Installation, Maintenance, and Use of Reclaimed Refrigerant

Improper equipment installation or maintenance will waste energy, shorten product lifespan, and may pose safety hazards. Insist on proper installation and system commissioning by qualified professionals. Support proper installation, commissioning, maintenance, and servicing of air conditioning and refrigeration systems to reduce refrigerant leaks and maintain energy efficiency consistent with Air Conditioning Contractors of America Quality Installation (ACCA QI) standards and original equipment manufacturer instructions [accq.org/standards/quality](https://accq.org/standards/quality). A list of qualified contractors can be found here: [hvac-contractors.accq.org/qa-contractors](https://hvac-contractors.accq.org/qa-contractors).

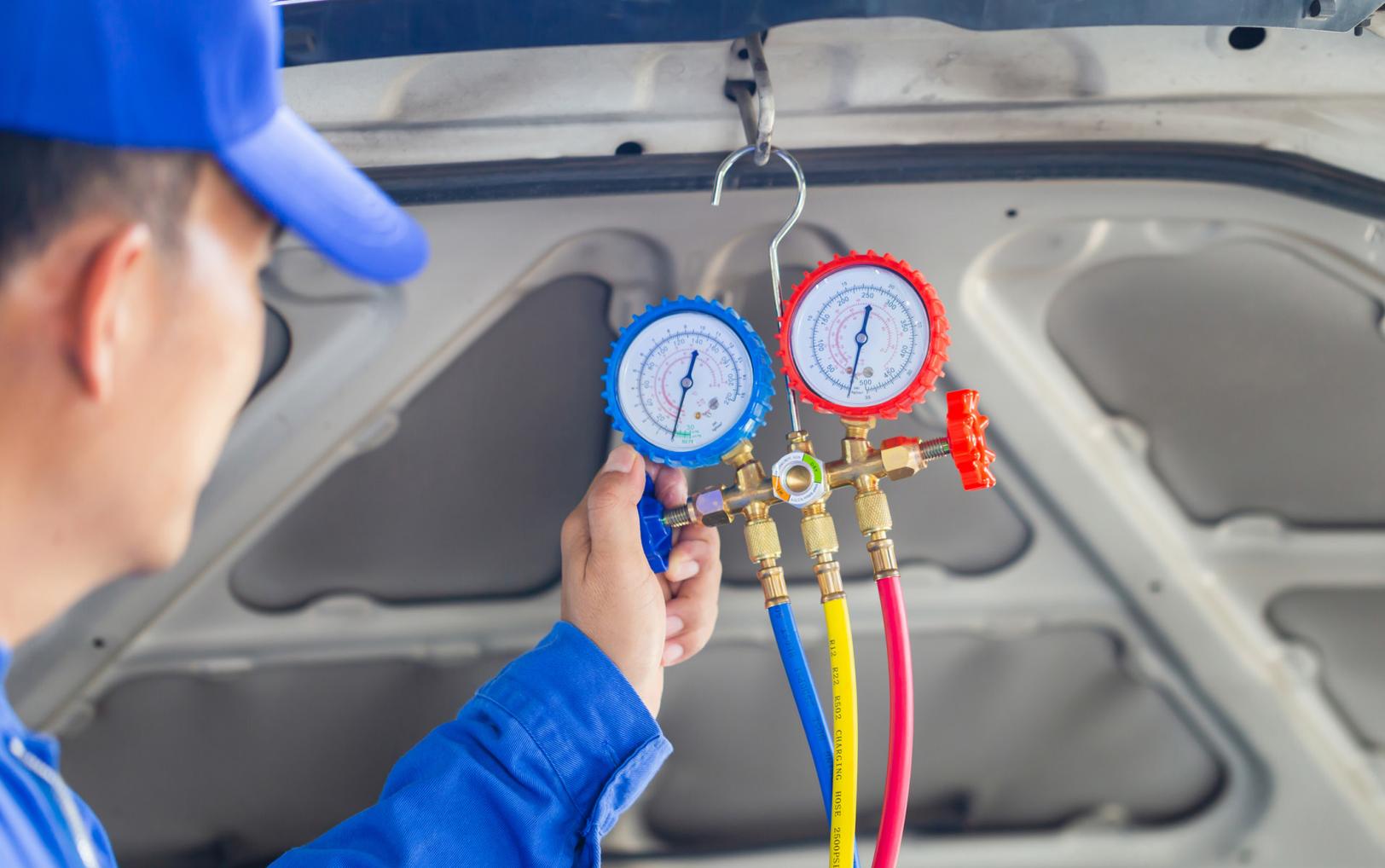
Reduce refrigerant climate impacts of existing equipment by using reclaimed refrigerant wherever possible. Ensure the recovery and reclaim or destruction of all refrigerants at equipment end of life. If your HVAC/R service technician does not have an existing relationship with a reclaimer, the U.S. Environmental Protection Agency maintains a list of certified refrigerant reclaimers: [epa.gov/section608/epa-certified-refrigerant-reclaimers](https://epa.gov/section608/epa-certified-refrigerant-reclaimers).

Support optimizing existing refrigeration systems by:

- Ensuring refrigerant purchasing records are maintained (see subsection C in *Policy Measures & Procurement Specifications*).
- Ensuring installers utilize best practices (see subsection 3 in Specifications for contract language).
- Ensuring internal staff/contractors are compliant with Clean Air Act requirements and EPA regulations.
  - **Stationary refrigeration and air conditioning equipment.**

EPA regulations ([40 CFR Part 82, Subpart F](https://www.ecfr.gov/current/title-40-chapter-82-subchapter-F)) under Section 608 of the [Clean Air Act](https://www.ecfr.gov/current/title-40-chapter-82-subchapter-F) require proper refrigerant management practices by those who buy or sell refrigerant, technicians, and owners and operators of AC and refrigeration systems. [Technicians](#) who maintain, service, repair, or dispose of equipment that could release refrigerants into the atmosphere must be certified. See the EPA Section 608 Technical Certification Page at [epa.gov/section608/section-608-technician-certification](https://epa.gov/section608/section-608-technician-certification). (These requirements apply for all refrigerants that contain ozone-depleting substances, e.g., hydrochlorofluorocarbons (HCFCs), and non-exempt substitute refrigerants, e.g., hydrofluorocarbons (HFCs), hydrofluoroolefins (HFOs) and blends thereof).
  - **Motor vehicle air conditioning equipment.**

According to the US EPA,<sup>8</sup> “Any person who repairs or services a motor vehicle air conditioning (MVAC) system for consideration (payment or bartering) must be properly trained and certified under section 609 of the Clean Air Act by an EPA-approved program. All technicians servicing MVAC-like appliances must be certified. EPA-approved technician training and certification programs provide education on the proper use of MVAC servicing equipment, the applicable regulatory requirements, the importance of refrigerant recovery, as well as the effects of improper handling of refrigerants on the ozone layer and climate. To be certified, technicians must be trained by an EPA-approved program and pass a test demonstrating their knowledge in these areas.”
  - See the Specifications, Section 3, for sample contract language.
- Considering the adoption of EPA Rule 608 as best practice for all refrigerants, [epa.gov/section608/section-608-refrigerant-management-regulation](https://epa.gov/section608/section-608-refrigerant-management-regulation). Not only will this reduce the impacts of refrigerants, material and operational costs will also be reduced due to fewer refrigerant purchases and improved equipment efficiency.



## | STRATEGY 5

### Require Proper Refrigerant Disposal and Materials Recycling

Ask to see your service professional's Section 608 (or in the case of vehicles, 609) Certification and refrigerant recovery or recycling equipment, and ask how they dispose of used or contaminated refrigerant. If they hesitate or cannot prove their certification, select a different service professional.

Specifically ask about your contractor's recovery equipment, which is necessary so they do not vent refrigerant to the atmosphere. Ask about their procedures for returning refrigerant to a certified reclaimer. If you have old ozone-depleting refrigerants, you may even be able to get paid for sending them to a company for destruction for carbon credits. Companies like A-gas, ClimeCo., Hudson and Tradewater offer these services. Refer to US EPA's list of Certified Refrigerant Reclaimers for more information, [epa.gov/section608/epa-certified-refrigerant-reclaimers](https://www.epa.gov/section608/epa-certified-refrigerant-reclaimers). (We do not endorse any specific company offering payment for refrigerant destruction, examples provided for illustration only.)

If purchasing new appliances, inquire about disposal practices for old appliances to be sure they are not re-sold in markets with poor environmental controls. This is a form of [environmental dumping](#). Instead, consider working with a partner in the US EPA's Responsible Appliance Disposal (RAD) program. RAD is a voluntary partnership program that works with utilities, retailers, manufacturers, state and local government agencies, affiliates, and others to dispose of old refrigerated appliances using the best environmental practices available—going beyond federal requirements to protect Earth's climate and ozone layer: [epa.gov/rad](https://www.epa.gov/rad). See subsection 4 of Specifications for contract language.

## 2 Tools, Resources, Certifications and Product Lists



### Energy Star or The Energy Star Most Efficient Standard

ENERGY STAR qualified products are third-party verified to save energy above and beyond minimum efficiency requirements, and the Product Finder allows purchasers to filter for products that use refrigerants that have lower impact on global warming. ENERGY STAR also lists “ENERGY STAR Most Efficient” products, which indicate energy efficiencies greater than comparable products with a conventional ENERGY STAR label. ENERGY STAR Most Efficient is a distinction recognizing products that deliver cutting edge energy efficiency along with the latest in technological innovation.

Learn more at [EnergyStar.gov](https://www.energystar.gov)



### Air Conditioning Contractors of America (ACCA) Quality Standards

Quality Standards describe the procedures that contractors should follow when designing, installing, maintaining, repairing, and verifying indoor environment systems. ACCA's ANSI-approved quality standards have been adopted by utilities, government agencies, manufacturers and others nationwide. and are freely available.

Learn more at: [acc.org/standards/quality](https://acc.org/standards/quality)

### Certified Refrigerant Reclaimers

Using reclaimed refrigerant is a great way to minimize environmental harm of higher GWP refrigerants used by existing equipment. Consider mandating that your organization and its service contractors use reclaimed refrigerant. The US EPA maintains a list of certified refrigerant reclaimers at:

[epa.gov/section608/epa-certified-refrigerant-reclaimers](https://epa.gov/section608/epa-certified-refrigerant-reclaimers)



### AHRI Certified Products

Air Conditioning, Heating and Refrigeration Institute (AHRI) certifies product performance and their database also lists ENERGY STAR certified products. The directory is available at: [ahridirectory.org](https://ahridirectory.org).

### Section 608 Certification for Stationary Air Conditioning and Refrigeration Technicians

EPA regulations ([40 CFR Part 82, Subpart F](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-F/part-82/subpart-F)) under Section 608 of the [Clean Air Act](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-F/part-82/subpart-F) require that [technicians](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-F/part-82/subpart-F) who maintain, service, repair, or dispose of equipment that could release ozone depleting refrigerants into the atmosphere must be certified. Starting on January 1, 2018, this requirement has applied to appliances containing most substitute refrigerants, including HFCs.

### Section 609 Certification for Motor Vehicle Air Conditioning Technicians

According to the US EPA, “Any person who repairs or services a motor vehicle air conditioning (MVAC) system for consideration (payment or bartering) must be properly trained and certified under section 609 of the Clean Air Act by an EPA-approved program. All technicians servicing MVAC-like appliances must be certified. EPA-approved technician training and certification programs provide education on the proper use of MVAC servicing equipment, the applicable regulatory requirements, the importance of refrigerant recovery, as well as the effects of improper handling of refrigerants on the ozone layer and climate. To be certified, technicians must be trained by an EPA-approved program and pass a test demonstrating their knowledge in these areas.

Learn more at: [epa.gov/mvac/section-609-technician-training-and-certification-programs](https://epa.gov/mvac/section-609-technician-training-and-certification-programs)



### 3 Procurement Specifications and Policy Measures

Please refer to the [Policy and Specifications document](#) for organizational policy language, procurement specifications, contract language, Request for Bid or Request for Proposal language. This document can be used by anyone who procures/purchases any refrigeration, air conditioning, and heat pump (RACHP) products and equipment (P&E); those who perform the following services (such as facility services teams) or hires or contracts for the following services: installation, maintenance, service, repair, destruction, recycling, and removal of RACHP P&E; new or expanding facilities project teams (architect and engineering teams); and sustainability reporting teams.

## Footnotes:

1. For example, The IKEA Group set an internal goal to reduce leaks across all installed equipment, reducing their Scope 1 emissions and saving energy and costs by doing so. [iea.org/energy-system/buildings/space-cooling](https://www.iea.org/energy-system/buildings/space-cooling)
2. All reclaimed refrigerants must be purified and certified by an independent lab that it meets the AHRI 700 purity standard. Recycled refrigerant is not the same as reclaimed. Recycled refrigerant is one that has been removed from the existing equipment and kept on site. Only the equipment owner may choose to reuse it in that equipment. However, according to the existing federal law, any recycled refrigerant taken from its original owner (by sale or transfer) must be reclaimed before it can be resold. Motor vehicle manufacturers have globally determined that recycled refrigerant is equivalent in performance to new or reclaimed refrigerant but manufacturers of stationary equipment have not yet endorsed recycled refrigerant.
3. Many people ask “is it possible to replace the refrigerant in my existing AC or refrigeration equipment with a climate friendly alternative? In most cases, unfortunately the answer is no: equipment is designed to use the refrigerant specified. That is why it is important to use reclaimed refrigerant: If you can’t replace equipment with new models that use low-GWP refrigerant, a good alternative is to use reclaimed refrigerant until you are ready to replace equipment.
4. World Economic Forum [weforum.org/stories/2022/07/passive-cooling-extreme-heat-weather-heatwaves/](https://www.weforum.org/stories/2022/07/passive-cooling-extreme-heat-weather-heatwaves/)
5. Source: [epa.gov/mvac/section-609-technician-training-and-certification-programs](https://www.epa.gov/mvac/section-609-technician-training-and-certification-programs)
6. See: [epa.gov/greenchill/advanced-refrigeration](https://www.epa.gov/greenchill/advanced-refrigeration)
7. UNEP/Climate and Clean Air Coalition (CCAC)(2014). [Low-GWP Alternatives in Commercial Refrigeration: Propane, CO2 and HFO Case Studies.](#)
8. See the RTOC report at: [ozone.unep.org/sites/default/files/2019-04/RTOC-assessment-report-2018\\_0.pdf](https://ozone.unep.org/sites/default/files/2019-04/RTOC-assessment-report-2018_0.pdf)