

Managing Refrigerants in the Metals Recycling Industry

- CFCs, HCFCs, and HFCs should all be treated differently in your emissions accounting.
- CFCs might be a carbon markets win for you if you are collecting in high volumes.
- Calculating your carbon footprint can help you make the most of your current management of refrigerants.

Could your metals recycling business be making more from the refrigerants you collect and recycle or destroy? Depending on what those specific refrigerants are, you could be eligible for carbon offsets, in addition to emissions credits against your carbon footprint.

If your business accepts appliances like refrigerators, cars, and air conditioning units with refrigerants still inside, you've likely been carefully staying up to date on Environmental Protection Agency (EPA) regulations. Staying in compliance with refrigerant removal and recovery protocol means you'll steer clear of lawsuits and

fines.



But even beyond simple compliance, knowing how your decisions tie into carbon markets means having a strong strategy for the future. Knowing more about your options can help you make [an accounting plan that ties into the Greenhouse Gas \(GHG\) Protocol](#), the widely-used global standard (which the EPA also uses) to measure and manage greenhouse gas emissions from the private and public sectors. You'll also be better prepared for regulatory changes—[some happening as we speak](#)—while benefiting from the work you're already doing. More on what you need to know below!

Impact of refrigerants on carbon emissions and the environment

As you may know, refrigerants—especially older ones—have a significant impact on carbon dioxide (CO_2) emissions that contribute to climate change. One estimate suggests that CO_2 emissions from cooling make up [10% of all global emissions](#).

Chlorofluorocarbons (CFCs), or halons, have the highest [global warming potential \(GWP\)](#) of all refrigerants. A unit of GWP is equivalent to the amount of warming

caused by a ton of carbon dioxide. Here is the status of the three most common refrigerant types:

| Refrigerant Type | One Common Type | Global Warming Potential Units (<u>calculated in 2013</u>) | Usage Status in United States |
|--------------------------------|-----------------|---|---|
| Chlorofluorocarbon (CFC) | R-12 | 10,200 | Phased out in mid-1990s to protect ozone (<u>Montreal Protocol</u>) |
| Hydrochlorofluorocarbon (HCFC) | R-22 | 1,760 | <u>Almost fully phased out by the EPA</u> |
| Hydrofluorocarbon (HFC) | R-32 | 677 | <u>Being phased down by the EPA</u> |

The GWP of the CFC R-12 is 10,200 times the climate effect of the same amount of CO₂! Even though CFCs are phased out, they are still in circulation in the scrap metal you collect today. Other more climate-friendly refrigerants have taken hold in Europe and are starting to be incentivized in the US. However, legacy refrigerants are likely to affect your emissions accounting for some time.

Refrigerants under the GHG Protocol

The GHG Protocol divides emissions into three “Scopes.” Refrigerants are considered Scope 1, a direct emission from your own sources, as opposed to purchased energy which is Scope 2, or supply chain/indirect emissions which are Scope 3. Emissions from refrigerants are also classified as “fugitive emissions,” emissions that come from

both intentional and accidental release into the atmosphere. Why does this matter to you?

Determining your fugitive emissions helps you better calculate your carbon footprint. We recommend calculating your footprint because it can provide a starting point for participating in green markets and reducing costs from potential carbon liability. Because of their high GWP, refrigerant fugitive emissions are likely to make up a meaningful percentage of your footprint.

Managing refrigerants and making the most of carbon markets

To manage refrigerants coming into your yards, you collect them, either with your Section 608 certified technician(s) or a third-party specialist that you hire. Then you can send them to be destroyed or reclaimed (recycled) by an approved facility. Whether you collect revenue from refrigerant recycling or create carbon offsets from destruction, you benefit from the emissions credits when accounting for direct emissions.

Accounting for your refrigerants comes in handy when you're looking at offsets and credits. The terms *carbon credit* and *carbon offset* are often used interchangeably, but they're slightly different. Carbon credits are awarded by a regulatory agency—such as the European Union emissions trading scheme or California's cap-and-trade program—as part of an overall emissions *allowance* (one credit = one ton of CO₂) that is lowered periodically to incentivize carbon reduction. Offsets are generated by the *elimination* of CO₂ in the environment. Other businesses can buy both your credits and offsets.

The potential for creating and selling to the carbon markets will vary depending on the volume and type of refrigerants you process.

| Estimated Collection Rates in Metal Recycling Industry | Offsetting or Credits | Economic value |
|--|---|---|
| 80-85% HFCs | No offsets available | Credit when accounting for emissions (footprint) |
| 10-15% HCFCs | Offsets in the <u>voluntary market</u> | Determined by amount collected and offset value in the voluntary market |
| Up to 5% CFCs | Credits in the <u>California cap-and-trade market</u> | Better value as credit in CA market means lesser volumes necessary |

Because CFCs have such a high GWP, they provide higher credits against emissions. They are also the least likely to be collected. As such, they could provide a financial opportunity for your business.

Getting started

As the world moves towards carbon neutrality, now is a great time to take stock of the refrigerants you take in and get a head start on regulatory changes. Start benefiting financially from your collection by making an accounting plan, know your options, and learning your carbon footprint!

In today's ever-evolving business climate, having an accurate inventory of your collection of refrigerants is important. Carbon accounting is a tool for doing this and helps too in determining your carbon footprint. The best financial choices between recycling or destruction can then be determined for your business.

Contact [Greenway Steel](#) to learn more.