freezer challenge

Climate-friendly freezers... it's not just about the kWh

What are HFCs?

HFCs, or hydrofluorocarbons, are a class of potent greenhouse gases that are commonly used in refrigeration systems, air-conditioning units, building insulation, fire extinguishing systems, and aerosols. They have come into use as a replacement for other chemicals that are ozone-depleting, but HFCs pose issues of their own. Namely, they have a high global warming potential (GWP) - anywhere from 1,000 to 9000 times greater capacity to

warm the Earth's atmosphere than carbon dioxide. Since HFCs are still common, they might be in your laboratory's cold storage units....refrigerators, freezers, and cold rooms.

Managing cold storage isn't just about the kWh

Better refrigerant management worldwide is one of the top ten most impactful climate change solutions in terms of gigatons of carbon dioxide reduced/sequestered according to Project Drawdown. "Refrigerant Management" means avoiding leakage of refrigerants into the atmosphere and the effective destruction of refrigerants at their end of life, which worldwide could reduce carbon dioxide emissions by approximately 57 gigatons by 2050. Managing refrigerants in these ways has a much larger impact on mitigating climate change than recycling, electric cars, geothermal power, or rooftop solar. This analysis was done by a team of climate scientists and published in 2017 in the eye-opening book *Drawdown,* with analysis revisions on the Project Drawdown website.

What can you do as part of the Freezer Challenge to reduce the impact of HFCs?

If you're retiring a freezer this year, take an interest in its end of life. Ask your facilities management team or equipment recycling team how the refrigerants are being removed, and inquire into what will happen to the refrigerants next. Furthermore, make sure your freezer is disposed of expeditiously - you don't want it to start leaking! If your lab is purchasing a new freezer, avoid purchasing units that contain HFCs. It doesn't matter how inexpensive they are, just don't buy them. There are laboratory freezer options now that use 100% natural refrigerants, which are a small fraction of the global warming potential of HFCs, often involving hydrocarbons or helium. Ask your preferred supplier or cold storage manufacturer if they use natural refrigerants in their products!

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