Business-As-Usual Lifecycle

As climate change intensifies, the world will increasingly rely on cooling appliances to cope with rising temperatures. The majority of these units use synthetic refrigerants like hydrofluorocarbons (HFCs) to generate cool air. But once these refrigerants are charged into equipment, where do they go?

Follow the expected path of refrigerant charged into a residential air conditioning unit in California, USA:

**EQUIPMENT CHARGED**

Refrigerants are produced and charged into new equipment during the manufacturing process.

**100% OF INITIAL CHARGE PLACED INTO NEW EQUIPMENT**

**EQUIPMENT IN USE**

Over its operating lifetime, equipment leaks refrigerant, which compromises performance and energy efficiency.

**OVER LIFETIME**

When equipment reaches the end of its useful life, the remaining refrigerant is commonly released (“vented”) to the atmosphere. Some refrigerant is recovered by technicians for reclamation or destruction.

**END OF LIFE**

When refrigerant is being stored, a small amount will leak into the atmosphere. The remainder will be reclaimed or destroyed.

**AT END OF LIFE, ~80% OF REMAINING REFRIGERANT IS VENTED**

**AT END OF LIFE, ~20% OF REMAINING REFRIGERANT IS RECOVERED**

**REFRIGERANT IN STORAGE**

Recovered gases are chemically refurbished to virgin purity standard and can be used again.

**REFRIGERANT RECLAIMED**

~70% of recovered gas is reclaimed.

Refrigerants are broken down, permanently preventing damage to the environment.

**REFRIGERANT DESTROYED**

~30% of recovered gas is destroyed.

**WHERE REFRIGERANT GOES**

- Destroyed
- Reclaimed
- Emitted

**EMITTED REFRIGERANTS HEAT UP THE PLANET**

HFCs are potent greenhouse gases. The Global Warming Potential of one commonly used refrigerant, R-410A, is 2,088 times that of carbon dioxide.

Leakage, refill, and recovery rates derived from California Public Utilities Commission, 2023, “Refrigerant Avoided Cost Calculator.”