## **Business-As-Usual Lifecycle**

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.



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, USA1:



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

**EQUIPMENT** 

REFILLED

Service technicians

recharge leaky equipment

with virgin refrigerant.

100%

~60%

### **EQUIPMENT IN USE**

### **OVER LIFETIME**

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

### **END OF LIFE**

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.

# ~75%

~80%

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

REFRIGERANT **IN STORAGE** 

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

ĕĕĕĕ

~30% OF RECOVERED GAS IS DESTROYED<sup>2</sup> reclaimed or destroyed.

~70% OF RECOVERED GAS

IS RECLAIMED<sup>2</sup>

## WHERE REFRIGERANT GOES Destroyed Reclaimed Emitted

REFRIGERANT **RECLAIMED** 

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



REFRIGERANT **DESTROYED** 

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

\*Leakage, refill, and recovery rates derived from California Public Utilities Commission, 2022, "Refrigerant Avoided Cost Calculator"
\*Reclamation and destruction rates approximated from U.S. Environmental Protection Agency, 2023, "Refrigerant Reclamation Summary
2000-2027" and Indied Nations Environmental Program, 2023, "Destruction of Controlled Substances"