



# Refrigerant Recovery for Recycling, Reclamation or Destruction

# Facts about Refrigerants

- Refrigerants are contained and not consumed by the Refrigeration System
- Due to their stability refrigerants are especially suitable for Recycling and Reclamation
- The Refrigerant itself is a valuable material

# Some Definitions

## Recovery

Removal of refrigerant from a system into a closed vessel

for

## Recycling

Reuse of the same refrigerant in the same refrigeration system

## Reclamation

Cleaning of refrigerant to meet official standard specification

## Destruction

Destruction/Separation by thermal cracking of the molecules



## Reuse

Refrigerant is reused after maintenance or repairs

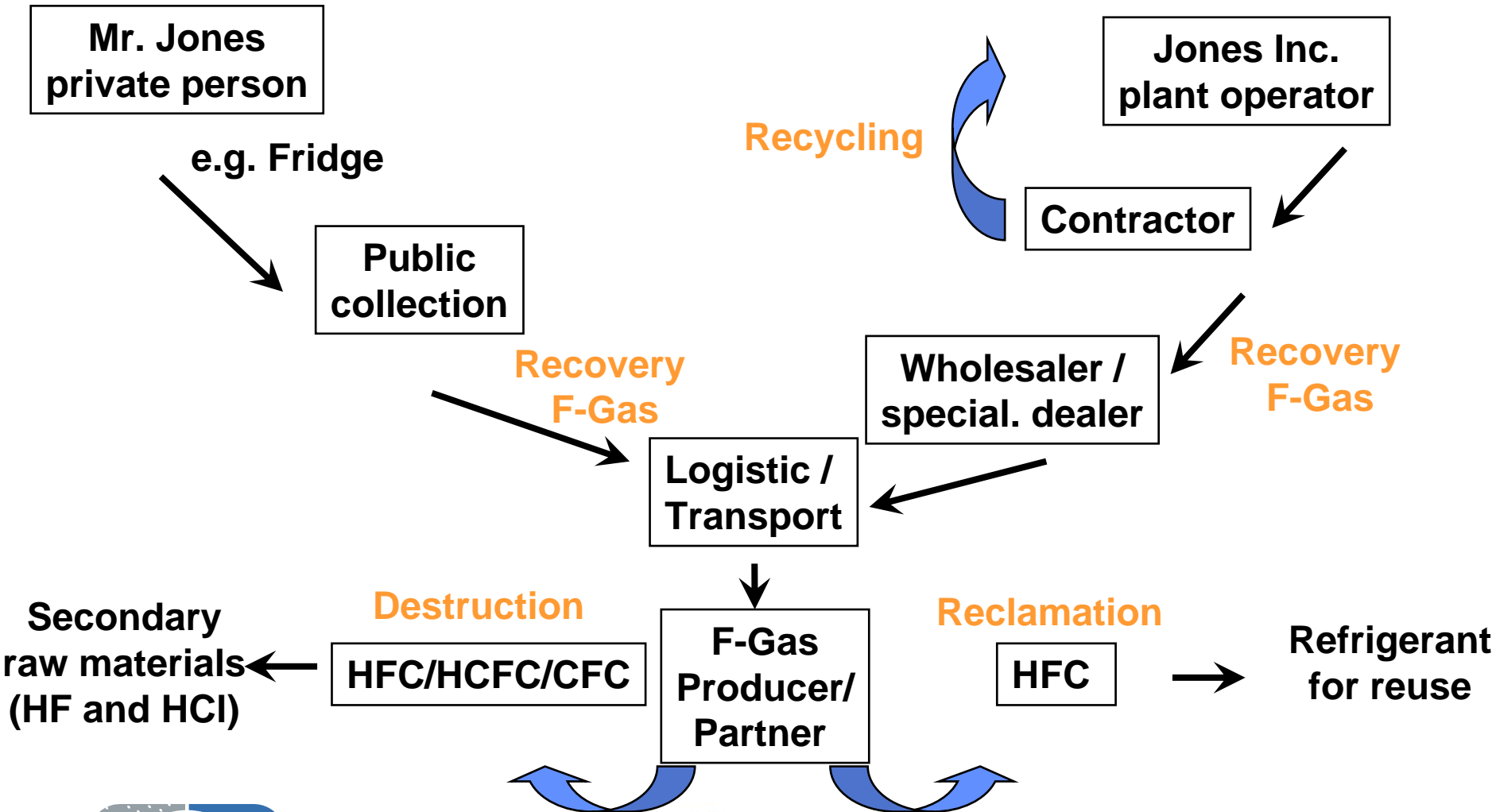
## Reuse

Refrigerant can be used like virgin material

## Reuse

HCl and HF can be recovered and reused as raw material

# Overview Recycling Systems



# Recycling -available machines-

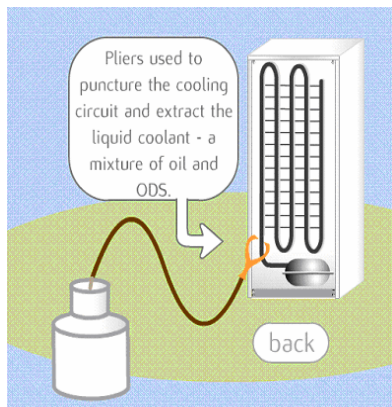
**Recovery / Recycling**

**Reclamation**



# Example: Recovery for destruction purpose

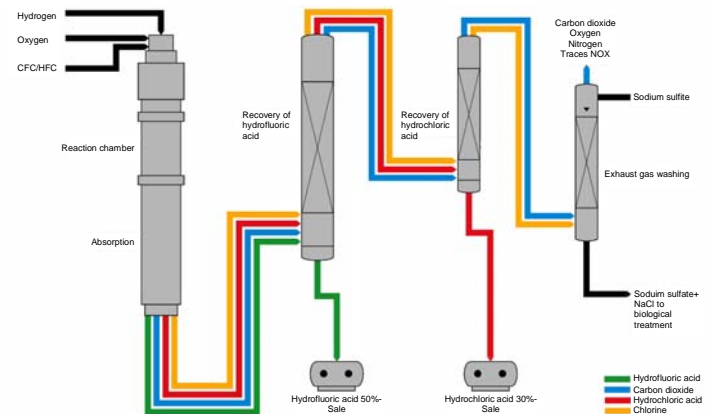
**Step 1:  
Recovery of  
Refrigerant / Oil**



**Step 2:  
Refilling / Transport  
of cylinders**



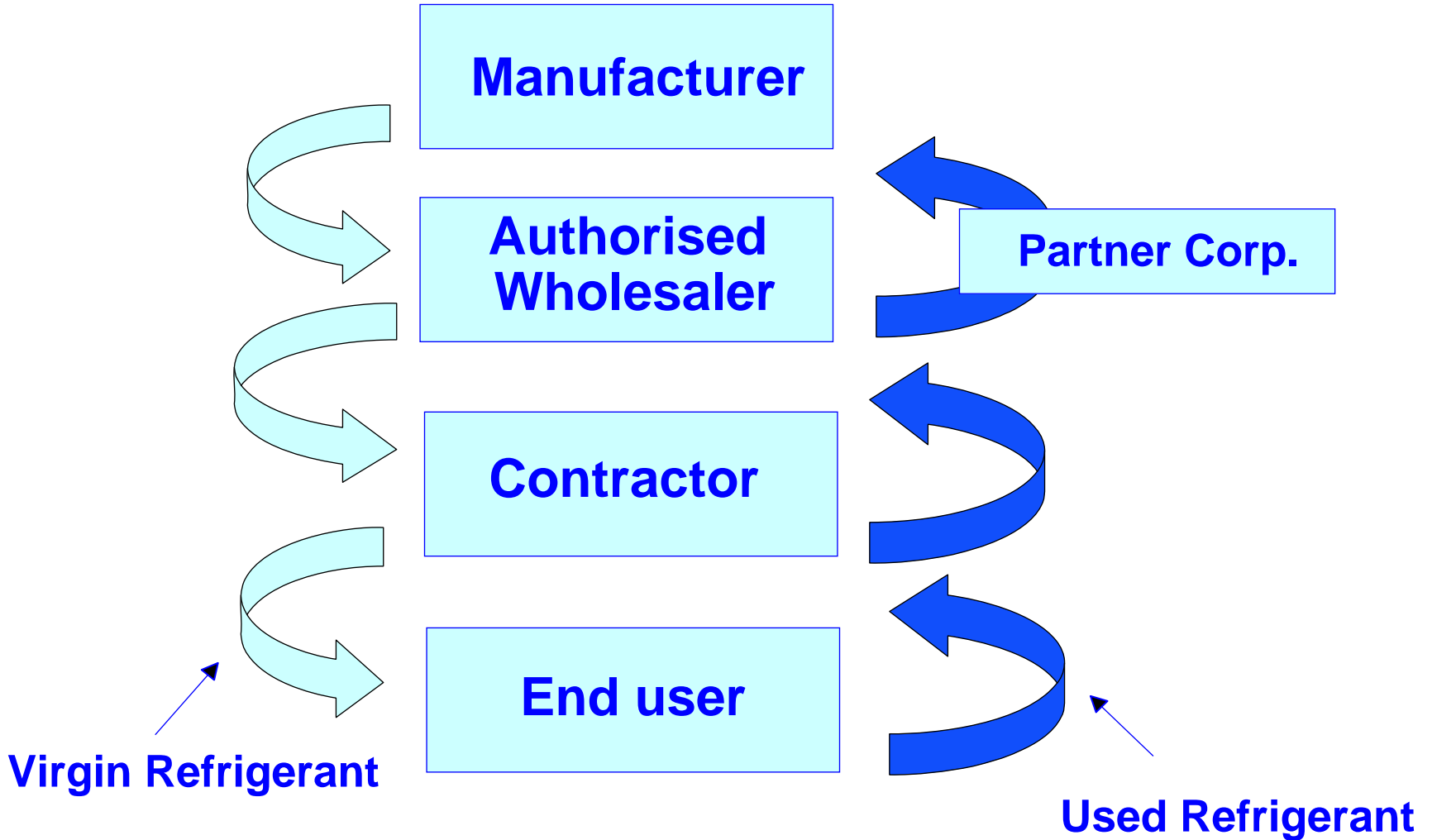
**Step 3:  
Thermal destruction  
/ separation**



# CONCLUSIONS

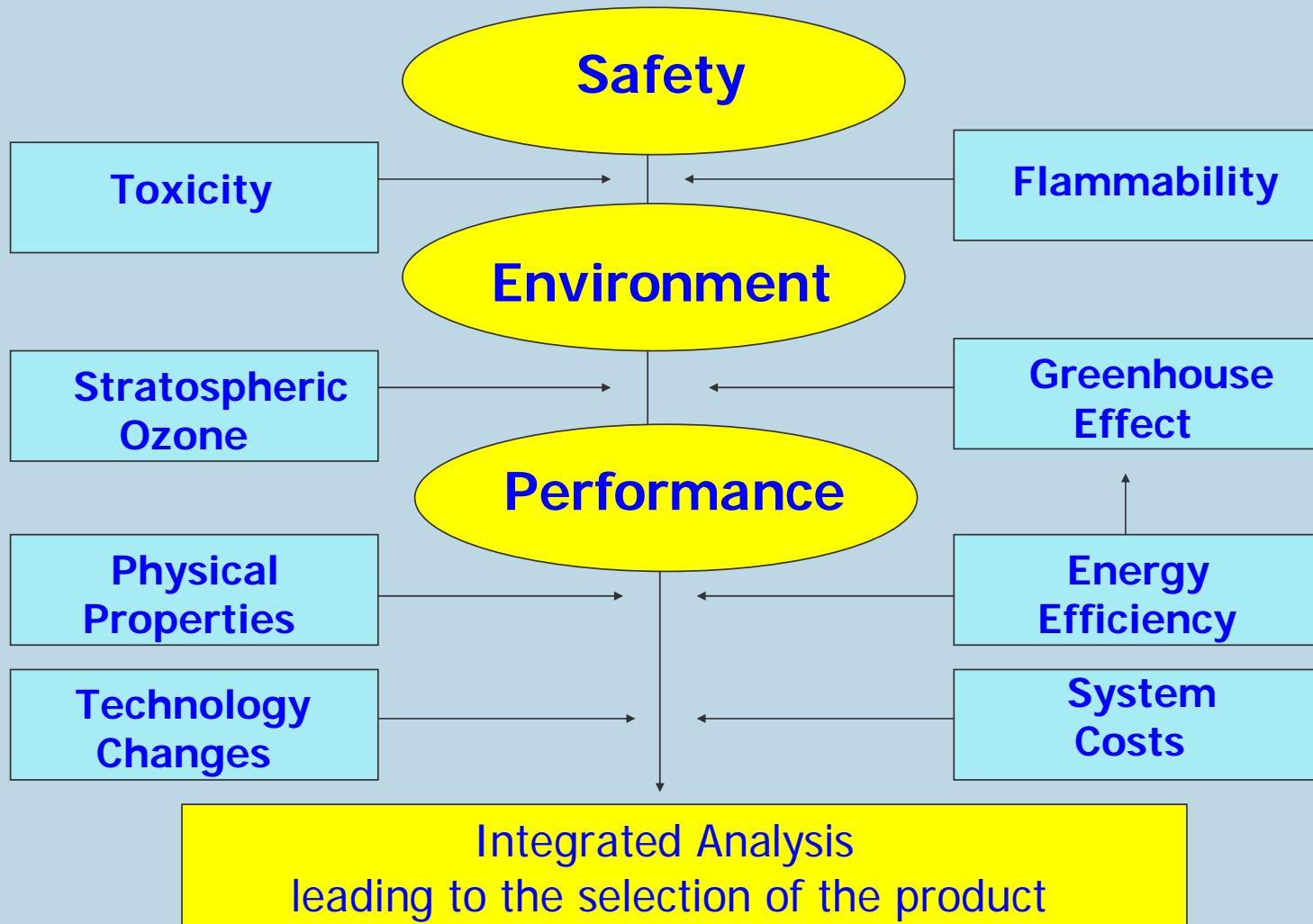
- Professional End of life management is key
- Recycling, reclamation and destruction are already operational today
- Reduction of bureaucratic hurdles regarding handling and cross-border transport of used refrigerants is essential

# LOGISTICS





# An Integrated Approach: Factors to Consider



# Producer Responsible Use Principles

- Minimize HFC emissions during manufacture
- Produce, transport, handle and use HFCs to assure worker and community safety
- Design HFC producing plants with a goal of zero HFC emissions
- Provide HFCs where societal value justifies their environmental impact or if applications have favorable LCCP/TEWI
- Engineer, operate and maintain HFC-using systems that minimize emissions
- Recover, recycle and destroy HFCs after use where feasible

# Producer Responsible Use Principles

- Cooperate with governments to ensure accurate accounting of HFC emissions
- Apply principles globally