



Vienna Convention
MONTREAL PROTOCOL

The Montreal Protocol

How does the Protocol treat the end-of-life of controlled refrigerants and equipment containing them?

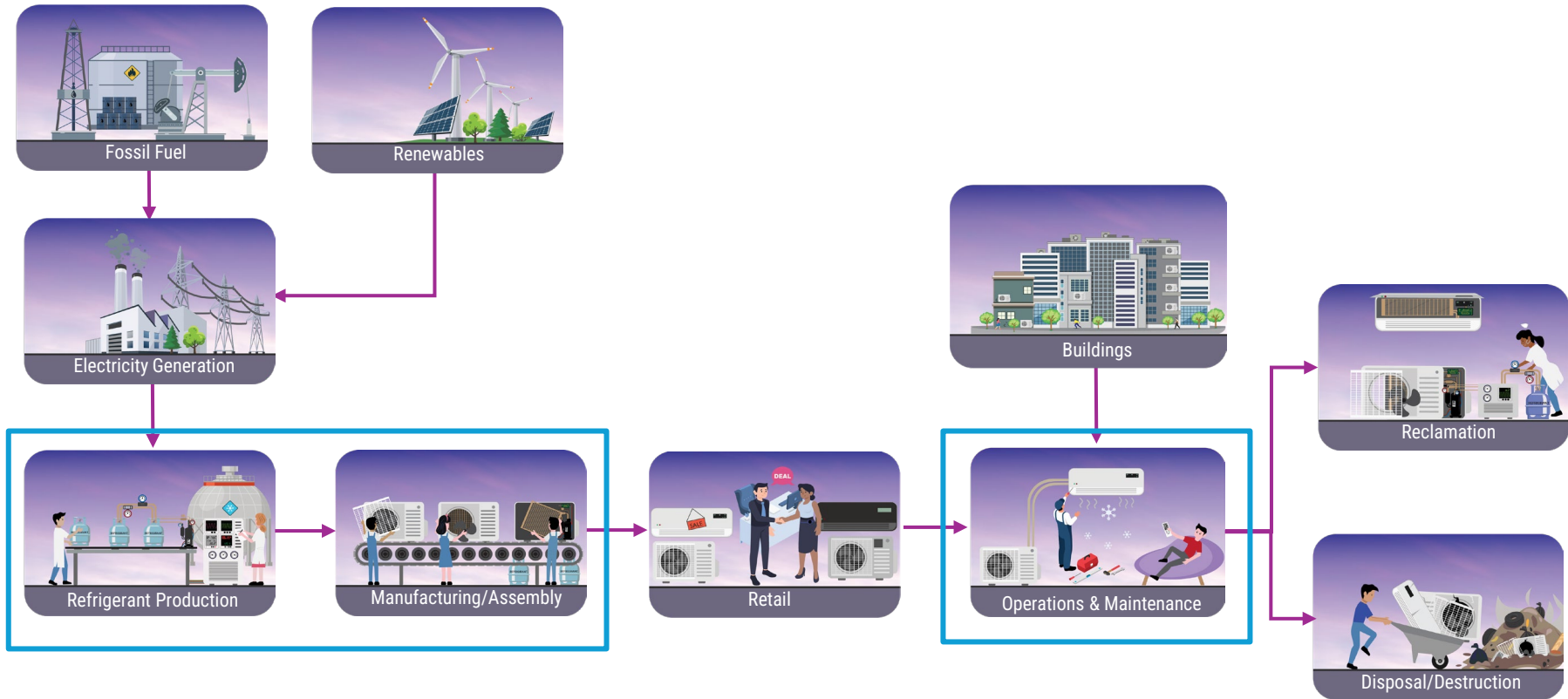
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What is the Montreal Protocol ?



Cooling value chain (room air-conditioner)



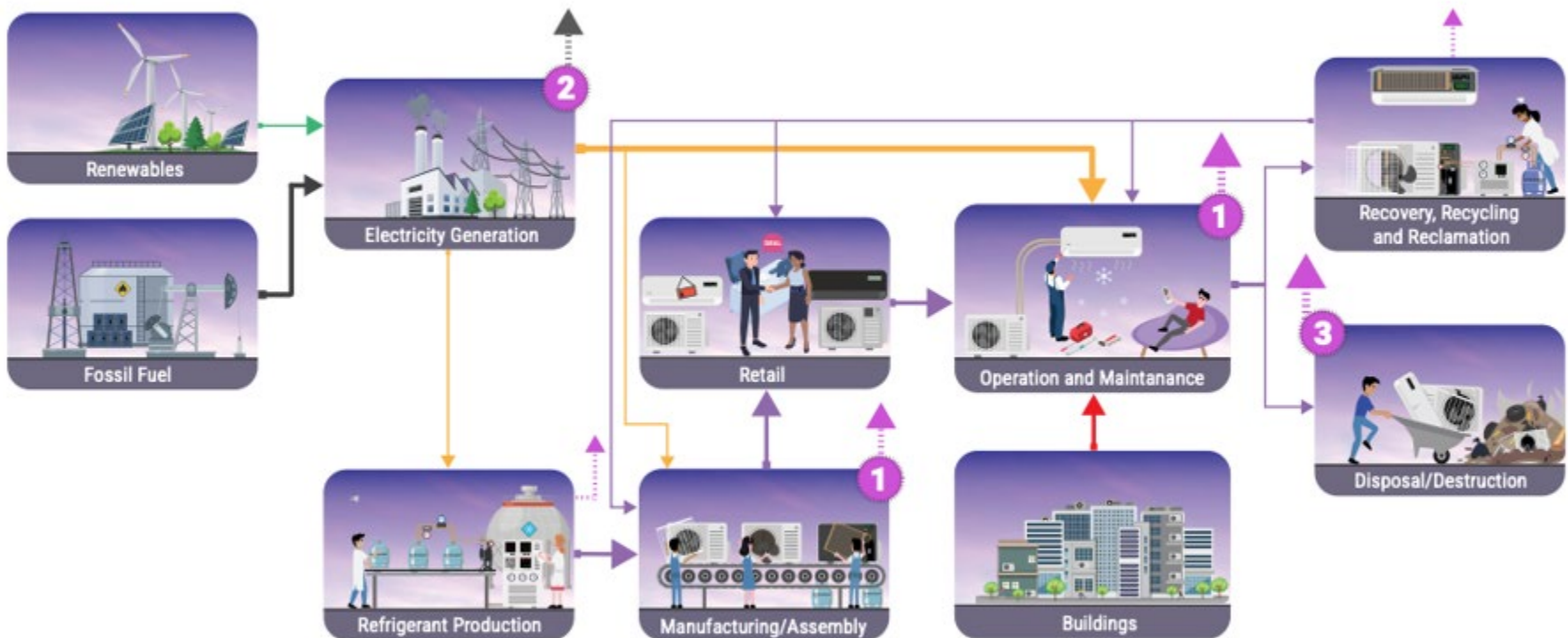
Control measures of the Protocol

Life cycle hotspots of room air-conditioners

Figure: A/C value chain hotspots

Below is the representation of the A/C value chain and its hotspots related to ozone layer depletion and/or climate change. A hotspot refers to a life cycle stage, process, input of resources or specific emissions, that accounts for a significant proportion of the impacts related to the function of a product/system. Hotspots are numbered according to the significance of their impact. The arrow thickness indicates the magnitude of the flow (a solid-line arrow) and environmental impact (dashed-line arrow).

→ Fuel Flow → Renewable Energy Flow → Electricity Flow → Refrigerant Flow → Heat Flow → Direct Impact → Indirect Impact ● Hotspots



Hotspots

1

Refrigerant leakage from A/C systems during their operation and maintenance contributes to climate change and ozone layer depletion.

2

The carbon dioxide (CO₂) emissions resulting from the use of fossil fuels in power generation contribute to climate change impacts during A/C operation.

3

Improper dismantling and disposal of A/C equipment can lead to significant emissions of ODS and GHG.

Provisions of the Protocol and decisions of the Parties related to products



Monitor and regulate import and export of products/equipment containing controlled substances (decisions VII/32, IX/9, X/9, XXVII/8, XXXIV/4, XXXV/13)



The use of recovered, recycled and reclaimed substances (decisions IV/24, V/24, VI/19)
Not included in calculated consumption and production
Mandatory Reporting
TBM under Basel Convention (Decision VII/31)



Environmentally sound disposal and destruction of substances
Mandatory reporting
Mandatory destruction of HFC-23

Decision XXXV/11: Life-cycle refrigerant management

1. Requests TEAP to prepare a report on the issue

👉 [The report on the TEAP Task Force Report on Life Cycle Refrigerant Management](#)

2. Requests the Executive Committee to consider providing a window of funding
3. Encourages parties to develop strategies, policies and activities to estimate and and manage banks
4. Requests the Secretariat to organize a **one-day workshop in 2024**, back-to-back with the **36th MOP**





There is a significant inventory in reachable banks (equipment in use or as waste) – between 16 -24 GtCO₂e in 2022, **not yet released to the atmosphere**



Leakage prevention through regulation and promotion of good practices



Supply: Supply of recovered, recycled and claimed refrigerant to reduce the need for virgin product



Recovery: Recovery of refrigerants from existing systems in a safe and compliant manner to avoid the release to atmosphere.



Recycling/Reclamation: Oil and Moisture removal/Separation of mixed refrigerants



Destruction: Destruction of 'End of Life' gases (where no re-use is possible, or by customer choice) using a TEAP approved destruction technology.

Thank you



**ozone
secretariat**

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