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**POSSIBLE CONSIDERATION OF A NEW SUB-SECTOR FOR
TRANSPORTATION REFRIGERATION**

Introduction

1. A project was submitted to the 25th Meeting of the Executive Committee for consideration in the commercial refrigeration sector for an enterprise which supplied and installed air-conditioning systems for buses and vans and refrigeration systems for trucks.
2. The enterprise installed after-market air-conditioning units, some of which were brand name (Mercedes, Ford, Izuzu, and Mitsubishi) and some of which it assembled under its own name from bought-in components (such as compressors, evaporators, condensers etc). For refrigerated trucks, the enterprise assembled refrigeration units from similar parts and components and installed them in trucks in accordance with contractual arrangements with the owners of the vehicles to meet the cooling requirements of the intended cargo. The enterprise also provided servicing through a network of workshops. The incremental capital and operating costs as of the project were calculated using the principles applicable to the commercial refrigeration sector.
3. The issue arising from the project, namely whether assembly, installation and servicing be treated as a new sub-sector, articulated by the Secretariat in document UNEP/OzL.Pro/ExCom/25/18/Corr.1, was considered by the Sub-Committee on Project Review at its 14th Meeting.
4. Based on the Sub-Committee recommendations, the Executive Committee decided in its Decision 25/17 “ to request the Secretariat to examine methods to initiate a study on whether transportation refrigeration could be considered a new sub-sector, and what, if any, costs might be eligible”.

Background

5. Transport refrigeration is a complex and diverse sector which generally includes ships for transportation of refrigerated cargo, refrigerated intermodal containers, refrigerated railcars, refrigerated road-trailers and trucks and transport air conditioning (bus and railway coach air-conditioning systems). This paper focuses more specifically on the assembly, installation and servicing of air-conditioning and refrigeration equipment in buses, trucks vans and cold rooms (for reasons that will be indicated in the paper) because these were the activities which gave rise to the relevant policy issues. The paper does not, therefore, offer guidelines for the transportation refrigeration sector.

Characteristics of new sub-sector

6. The assembly, installation and servicing of refrigeration equipment have features which distinguish these activities from industrial conversion projects, which form the bulk of the refrigeration sector activities funded by the Multilateral Fund to date. The most important distinguishing feature is the provision of equipment and services on a contract basis for the assembly and installation of refrigeration and air-conditioning systems at the customer’s end. These activities warrant special consideration and

formulation of relevant guidelines. It should be noted that such activities could also be provided by the same enterprise to the owners of cold rooms (hotels and restaurants), grocery stores, butchers, etc.

Consumption

7. With perhaps only a few exceptions, all commercial refrigeration projects submitted to and approved by the Executive Committee emanated from enterprises which had in place manufacturing lines with known production capacity which were consuming amounts of ODS commensurate with the number of units produced by them in any given year. An enterprise which is engaged in assembly and installation (an after-market activity) does not have a production line per se. The methods of operation can vary widely. In some instances, an enterprise's business may consist of large orders from major industrial customers such as trucking companies. In other cases or at other times, the enterprise might be producing a pre-assembled product which is shipped to the customer. In the latter circumstances installation and charging of refrigerant may be done on site, either by technicians from the enterprise or on some occasions by the customer himself.

8. It is to be noted that the activities in such enterprises depend on future individual orders for either CFC based or non-CFC based MAC and transport refrigeration equipment from customers who are the owners of the vehicles. Thus, absent any ban on the use of CFCs, such enterprises may very well continue to install both CFC and non-CFC based equipment, activities which would not result in specific, verifiable CFC phase-out either by the enterprise or by the end user.

Eligibility of capital cost

9. Capital costs associated with charging equipment, vacuum pumps and leak detectors required to handle non-CFC refrigerants may be eligible only if the enterprise discontinues the installation of CFC equipment. (The enterprise may continue to service existing CFC equipment).

Eligibility of Operating Costs

10. Mass production in the domestic and commercial refrigeration sector requires manufactures to incur their incremental operating cost in bulk upfront, before the product is sold. However, the after market assembling and/or installation of refrigeration equipment is carried out on a contractual basis, i.e. full costs of parts and services as well as refrigerant and oil can be included in the order and charged to the end user. In these circumstances, the enterprise may not incur any incremental operating cost. Additionally, the value of an overall contract for work of this nature is frequently much higher than the cost of a domestic refrigerator, making any differential arising from the IOC component less significant and more readily passed on to the customer.

11. At its 10th Meeting the Executive Committee discussed avoiding double-counting in paying incremental operating cost to an enterprise in Article 5 countries. The Committee decided that incremental cost would not be financed by the Fund where there was evidence of double-counting (UNEP/OzL.Pro/ExCom/10/40 paragraph 171 (d)).

12. For these reasons, incremental operating costs were excluded from a bilateral project approved by the Executive Committee at its 24th Meeting for four Iranian companies dealing with installation of refrigeration and air-conditioning units in vehicles and wagons. Proposed incremental operating costs, which were associated with installation, were also excluded from funding approved at the 26th Meeting for phase-out of the MAC sector in China which included air-conditioning in trucks and buses.

13. On the basis of the above, it is arguable that operating costs in this new sub-sector ought not to be considered as eligible for compensation.

Cold Rooms

14. In conducting its research for this paper, the Secretariat concluded that the same consideration regarding both capital and operating costs apply to refrigeration contractors who assemble and install refrigeration equipment in cold rooms. The same range of activities is undertaken, the work is performed to meet the customers' requirement (CFC, HCFC or HFC systems) and the customer pays the full cost of the work done and the equipment installed.

Servicing and CFC recovery/recycling from refrigerated trucks, trailers and MAC equipment installed in vans and buses

15. The project proposal submitted to the 25th Meeting also included a request to fund CFC recovery/recycling equipment and servicing equipment to handle non-CFC refrigerants in new transport refrigeration and MAC systems for 27 servicing companies in Turkey.

16. Funding of capital costs for recovery/recycling and servicing transportation refrigeration systems and MAC units need to be considered in the light of the pertinent Executive Committee decisions which inter alia stipulate:

- Future refrigerant recovery and recycling projects should be prepared within the context of the refrigerant management plan/strategy of the country concerned;
- Implementing Agencies should work with the countries concerned to ensure that the prerequisites for success were put in place before recovery/recycling projects were implemented, including incentives or regulatory measures;

- There should be an investigation of the practicality and implications of taking operating savings resulting from recovery and recycling into account.

17. Proposals for servicing have been deleted from previous refrigeration projects approved for Turkey and for other countries for this reason.

Conclusions

18. The analysis presented above was discussed in detail by the Fund Secretariat and the implementing agencies. The Secretariat and the implementing agencies agreed to advise the Executive Committee as follows:

- Activities characterised by the assembly, installation and charging of refrigeration systems should be treated as a new sub-sector distinct from domestic and commercial refrigeration
- This new subsector has yet to be fully defined and the activities of enterprises within it can overlap with the commercial refrigeration sub-sector
- Where the activities are consistent with those found in typical commercial refrigeration projects approved by the Executive Committee, the projects could continue to be considered as part of the commercial refrigeration sub-sector
- Incremental costs for capital equipment should continue to be eligible for funding on the same basis as the commercial refrigeration sub-sector, provided that the ODS-based equipment is destroyed.

19. The Secretariat and the implementing agencies were unable to resolve the issues of quantifying the consumption in the sub-sector and subsequently defining the incremental operating costs or savings.