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OPTIONS FOR INCREMENTAL OPERATIONAL COST DURATIONS IN THE DOMESTIC REFRIGERATION SECTOR (DRAFT)

(submitted by UNDP, UNIDO and the World Bank)

Options for Incremental Operational Cost Durations in the Domestic Refrigeration Sector

Introduction

At its Thirteenth meeting in July of this year, the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol (EC) decided the following with regard to the projects which had been submitted at that meeting in the commercial and domestic refrigeration sectors:

- To approve the requested capital costs;

- To approve incremental costs of one year's duration calculated on the basis of the cost prevailing following the start of operations, if that modality was requested, or incremental operating costs (IOC) of six months' duration calculated on the basis of prices prevailing when projects were approved, or 10 per cent of incremental operating capital costs, if that modality was requested (UNEP/OzL.Pro/ExCom/13/47).

In addition, the EC requested "UNDP, UNIDO and the World Bank to formulate a joint proposal on operational incremental costs, covering the various issues involved in such calculation, to be presented to the Executive Committee at its Fourteenth meeting (UNEP/OzL.Pro/ExCom/13/47)."

This note synthesizes information from the Secretariat's recent document, "Impact on the Fund of Various Operational Cost Durations in the Domestic Refrigerator Sector" (UNEP/OzL. Pro/ExCom/13/40), with the views expressed by the members of the EC at the Thirteenth meeting and discusses various options for financing IOC in the domestic refrigeration sector. In presenting the following options and information, the Implementing Agencies hope to facilitate the Executive Committee's final decision on this matter so that a clear and consistent policy can be communicated to all the client countries and their enterprises.

Rationale for Shorter Duration

A transitional period can be set by the Executive Committee in determining appropriate time periods for reimbursing incremental operating costs. As stated in the "Indicative List of Categories of Incremental Costs" (paragraph 1d), "The funding of incremental costs is intended as an incentive for early adoption of ozone protecting technologies. In this respect the EC shall agree which time scales for payment of incremental costs are appropriate in each sector."(Annex III, page 38). Thus, providing incremental operating costs for a transitional period helps safeguard "early phaseout enterprises" from being at a competitive disadvantage. In the refrigeration sector this period may be particularly short as production will begin only after a substantial lead time of testing, etc.

In addition to assisting enterprises, setting an "appropriate" transitional period can also safeguard the Fund's resources. This is clearly indicated in the following statement on recurrent costs from the document, "Further Definitions of Incremental Costs" (UNEP/OzL.Pro/ExCom/7/21):

The "Indicative List of Categories of Incremental Costs" states that "the incremental recurring costs apply only for a transition period to be defined." The reason for restricting financial assistance to a transition periods is presumably to limit the Fund's liability which otherwise could be open-ended (page 4, paragraph 13).

Limiting the Fund's liability in the domestic refrigeration sector is particularly important given the estimated incremental operating costs for the sector. As the Secretariat stated in its June 1994 paper on the issue, even assuming that operating costs are on a downward trend, funding full operating costs for all potential projects in the domestic refrigeration sector (about 8 million units per year) as estimated in the Fund's Three-Year Plan and Budget would cost the Fund from approximately US $240 to 380 million over three to four years. UNIDO comes to a similar estimate using 10 million units as the base, namely US $317 million over four years. (These amounts are based on the following per unit costs as estimated by the Secretariat and UNIDO: The Secretariat estimates an average per unit cost of $10-12. This average cost was calculated by the Secretariat on the basis of projects presented by the implementing agencies; IOC for the refrigerants were estimated at $8.45 per unit and foams range from $2-3.65 for the more expensive blowing agents to $1.28 - 1.50 for cyclopentane. UNIDO estimates $10 per unit. These numbers are a composite of the average per unit costs of refrigerants and foam.)

The World Bank has a number of projects for which the IOC of refrigerant ranges from $2 to $8. The lower end is achieved in the very large manufacturing plants (> 500,000 units/year) while the higher end is typical of smaller plants (< 100,000 units/year). Even if one assumes the IOC of foam blowing with cyclopentane going to zero in the very near future and takes the lowest refrigerant cost of $2 per unit (one can safely assume that the long-term trend will be toward the lower end of this range), the long-term annual cost would be about US $16 million. Using the Secretariat's formula, the incremental operating cost of refrigerant only, over a 4-year period, would be $64 million dollars. It would seem that there will be a sufficient supply of CFC available over the next few years to delay the cross-over between the price of CFC and its alternatives. This would lead, over the foreseeable future, to a positive per-unit IOC in the $2-3 range, or typically less than 1 percent of the price of a typical refrigerator. While significantly less than the numbers quoted above, it would still represent over 14 percent of total project funds; raising significant cost-effectiveness issues.

As the Secretariat pointed out in its recent document on this issue, the price differential between the CFC and non-CFC-based technologies in the sector is decreasing: "The demand and supply of CFCs and their substitutes will continue working against the CFC users. This means that the price of CFC will continue to go up, with the substitutes going on the downward trend (page 8, paragraph 49)." While it is safe to say that all the Implementing Agencies agree with this assessment, they are, nevertheless, not in a position to determine when this crossover will happen (i.e., when IOC will become negative). In addition regional disparities in prices already exist and may grow over time. Despite these difficulties, the Implementing Agencies are expected to make an estimate of the time required for the participating enterprises to fully recover the increased IOC. (Under certain scenarios these costs will be recovered immediately while in others there will be a permanent increase in the incremental operating costs which will eventually have to be passed on to the consumer or absorbed by the manufacturer.)

In addition to the above arguments, numerous opinions were expressed at the thirteenth meeting which led to the consideration of the options discussed below.

Opinions and Options

Representatives of the EC and the Implementing Agencies expressed a variety of opinions about the incremental operating costs issue at the Thirteenth meeting. In essence, two over-arching opinions were expressed during discussion:

1) "The incremental operational cost duration for domestic refrigeration should be decided upon a case-by-case basis." A number of representatives expressed this view. Two major arguments were presented in favor of the "case-by-case approach:"

    - that the EC would be over-stepping its authority in "judging" the duration period decided upon by the Implementing Agencies or in deciding that Parties "should not exercise a right under the Protocol;" and

    - that any reduction in the incremental operating costs duration could act as a disincentive to the early phaseout of ozone depleting substances (ODS).

2) A clear policy based on a reasonable transition period and implications for the fund in terms of resource distribution and objectives should be established for incremental operating cost duration in the domestic refrigeration sector. A number of representatives from both the EC and the Implementing Agencies expressed this view. Arguments in favor of establishing a clear policy included:

    - given the extremely high potential costs in the refrigeration sector and the serious impact this could have on the Fund's overall ability to address ODS phaseout, the EC should "determine the period for which incremental operational costs were applicable;"

    - clear guidance to the Implementing Agencies is necessary so that all projects can be treated equally;

    - the lack of clear guidance on the issue makes "action difficult and time consuming;" and

    - Implementing Agencies could lose credibility in the eyes of client governments if "different operational cost durations were agreed to by different agencies in different countries."

The Implementing Agencies proposed two possible options:

1) 10 per cent of incremental capital costs to be paid up-front; or

2) Six months of incremental operating costs calculated at current prices and paid up-front or incremental operating costs for a duration of one year adjusted according to the prevailing costs at the time of disbursement, when the modified plant was operating, whichever was greater.

The following arguments are put forward in support of each of the Agencies' options:

Fixed 10% of capital costs

- An up-front payment provides an immediate and often sufficient incentive for the companies to undertake an ODS phaseout project. Avoids time-consuming exercise of estimating/verifying future in put prices which vary regionally and even between countries.

- With an up-front payment that is not linked to a specific use, the enterprise can use the funds to implement a variety of cost savings measures which may allow it to reduce its other operational costs which are not linked to the phaseout of CFCs. In fact, each enterprise may already have a variety of cost-cutting projects which it cannot implement due to the shortage of capital. Therefore, a more efficient use of funds may result if they can be used for enterprise-specific cost-cutting measures rather than only for covering the IOC.

- The proposed 10% up-front payment is easily administered (at the enterprise and agency levels), an aspect which should not be dismissed given the difficulties in even determining the enterprise incremental operating costs.

- However, it should be noted that the 10% upfront payment would likely be more attractive to larger plants/projects. For smaller plants/projects with relatively low capital costs, the 10% formula may provide little assistance.

Six months of incremental operating costs calculated at current prices (Assuming a decrease in IOC due to technology change and "cross-over" of costs with a start up time in 1 1/2 years.)

- The amount of money will likely be the same or slightly higher than incremental operating costs calculated on the basis of unit costs prevailing at the time of start of operation, for a period of one year. However, project duration can affect this calculation. For projects with a shorter implementation cycle, e.g., 12-18 months total, the one-year option may give a higher return than the six-month option.

- The method of calculation is determined on the basis of actual unit prices, as opposed to speculations about future prices.

- It eliminates the need to audit operating costs once plants are in operation.

- As with the "10 % option," the Fund and enterprise will both know at the time of project approval how much money has been committed for IOC. This may provide an incentive to enterprises who would be wary of the uncertainty of other cost calculations.

Incremental operating costs for a duration of one year adjusted according to the prevailing costs at the time of disbursement

- Based on actual costs incurred by the enterprises at the end of the year. (As noted above, project duration can influence cost outcomes for some projects.)

Conclusion

As stated above, even assuming that operating costs are on a downward trend, funding full operating costs for all domestic refrigeration projects, as estimated in the Fund's Three-Year Plan and Budget, would put an incredible strain on the Fund. Given the global implications of this issue for the Fund, it is essential for the Executive Committee to determine which, if any, of the Agencies' proposals can be accommodated with the available resources. The Implementing Agencies hope that the information provided in this options paper will help the EC to finalize its recommendation. Regardless of the outcome of the EC's decision, the Agencies look forward to working together to ensure the policy's swift and smooth implementation.