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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-fourth Meeting
Montreal, 27-31 May 2024
Item 12(b) of the provisional agenda[1]

FURTHER ELABORATION ON THE OPERATIONAL FRAMEWORK TO SUPPORT MAINTAINING AND/OR ENHANCING ENERGY EFFICIENCY DESCRIBED IN DOCUMENT UNEP/OzL.Pro/ExCom/93/98 (DECISION 93/93(d))

I. Background

1. At the 93rd meeting, the Executive Committee requested the Secretariat to further elaborate on the operational framework to support maintaining and/or enhancing energy efficiency described in document UNEP/OzL.Pro/ExCom/93/98.[2] The further elaboration should include *inter alia* a methodology for quantifying energy-efficiency gains; potential modalities for funding both investment and non-investment activities,[3] and the framework to define each funding modality to support enterprises in various stages of project implementation; the refining and expansion of the information provided in part III of document UNEP/OzL.Pro/ExCom/93/98 on the five equipment types in order to make estimates of the kilowatt hours (kWh) saved and of the climate benefits in carbon dioxide equivalent (CO_2-eq) for each of the manufacturing conversions, to the extent feasible; and potential modalities for monitoring and reporting on progress and the outcomes of the projects aimed at maintaining and/or enhancing energy efficiency (decision 93/93).

2. In preparing the present document, the Secretariat consulted technical and financial experts on project activities relating to energy efficiency in refrigeration, air-conditioning and heat-pump (RACHP) applications, industry personnel dealing with RACHP equipment, and bilateral and implementing agencies. The Secretariat used the information presented in UNEP/OzL.Pro/ExCom/93/98, information provided in UNEP's Global Cooling Watch 2023 report and the analytical report relating to sustainable cooling

[1] UNEP/OzL.Pro/ExCom/94/1

[2] Operational framework to further elaborate on institutional aspects and projects and activities that could be undertaken by the Multilateral Fund for maintaining and/or enhancing the energy efficiency of replacement technologies and equipment.

[3] Including those listed in part III and part IV of document UNEP/OzL.Pro/ExCom/93/98, taking into consideration subparagraph (d)(i) of decision 93/93, the principles listed in paragraphs 10–12 of document UNEP/OzL.Pro/ExCom/93/98.

produced by the International Energy Agency (IEA).[4] The Secretariat also took into consideration the projects submitted pursuant to decision 91/65, to the 93rd and 94th meetings of the Executive Committee, as well as the interventions made by Executive Committee members during these project consultations.

3. This document includes additional information and updates as requested by the Executive Committee under decision 93/93(d)(i) to (iv). It is also based on a more detailed review of the energy-efficiency assessment methodology for the five types of equipment identified in UNEP/OzL.Pro/ExCom/93/98 and an adjusted methodology for the calculation of incentives needed to achieve higher levels of energy efficiency.

4. When reading the document, Executive Committee members should take into consideration the following aspects:

(a) Energy efficiency is not compliance-related under the Montreal Protocol. Therefore, CO_2 emission reductions related to energy efficiency do not directly fulfill compliance obligations.

(b) The additional costs associated with energy efficiency in the context of the HFC phase-down may be decreasing over time, mainly because of the decrease in the cost of energy-efficient components thanks to more cost-effective design, increased supply and the "learning curve" in design and manufacturing processes for those components. However, despite this possible downward trend in the cost of components, industry experts tell us that it is difficult to predict their cost over the next three to five years. This is because other factors, such as inflation, country-specific supply-chain challenges and structural factors that affect commercial arrangements between equipment manufacturers (e.g., long-term business relationship, volume of purchase/quantities of components for energy-efficient equipment) could in fact increase the cost of components. These factors may result in higher costs associated with the adoption of energy-efficiency projects.

(c) Energy-efficient operation of the equipment would result in lower indirect emissions from energy generation. It is, however, difficult to correlate energy savings in kWh with the indirect emissions (i.e., CO_2-eq tonnes) without a full assessment of usage characteristics in different markets.[5] Therefore, energy consumption savings in kWh could be considered as the key metric for transitioning to energy-efficient equipment. A global value of the carbon intensity of electricity (kg CO_2-eq/kWh) could provide a broad idea of the impact of energy-efficient equipment operation on indirect CO_2 emissions.

(d) Low-global-warming-potential (GWP) alternatives are available and have been extensively adopted by the industry for some applications (e.g., domestic refrigerators and self-contained commercial refrigeration). In developing the present paper, the Secretariat took this into account to maximize the climate benefit, to the extent possible, when looking at maintaining and/or enhancing energy efficiency while phasing down HFCs.

(e) The present document makes specific reference to small- and medium-sized enterprises (SMEs). Defining such enterprises is subject to the discussions and decisions of the Executive Committee under the cost funding guidelines.

5. The present document complements the information provided in document UNEP/OzL.Pro/ExCom/93/98 and adjusts the methodology for calculating the cost of incentives

[4] The value of urgent action on energy efficiency, International Energy Agency (IEA).

[5] For example, manufacturing of energy-efficient equipment in a country with a high grid-emission factor would result in less carbon emission savings if the equipment were exported to a country with low grid-emission factor.

for investment activities. Therefore, it must be read in conjunction with document UNEP/OzL.Pro/ExCom/93/98. The present document is divided in five sections:

I. Investment activities for manufacturing of equipment; this section includes details on methodology of incentive calculations

II. Estimation of energy-efficiency gains in kWh/year and climate benefits in carbon dioxide equivalent

III. The specific roles of national ozone units and of bodies regulating energy efficiency

IV. Operationalization of revolving funds for energy efficiency while phasing down HFCs

V. Recommendation

I. Investment activities for manufacturing of equipment

I.1 The rationale of an incentive-based approach

6. The Secretariat has explored both an incentive-based approach and an incremental-cost-based approach for energy-efficiency-related activities. An incentive-based approach may be a better option to consider for the following reasons:

(a) There are no compliance targets for energy efficiency. Instead, project performance is assessed against specific agreed levels of energy-efficiency improvement;

(b) The costs incurred to achieve improvements in energy efficiency, such as additional costs related to the use of energy-efficient components like compressors or control valves, are based on the manufacturing costs of the relevant components and the cost drivers (e.g., high growth in use of specific components that would lower the unit costs, lower costs of materials). This type of cost is different from the incremental costs linked to the types of interventions in projects involving refrigerant conversion;

(c) Conversion to energy-efficient products would generate energy savings for the users of those products, as well as savings for the country in terms of investment in infrastructure for energy generation (e.g., lower power demand from RACHP equipment would result in lower infrastructure investment for power generation). This means that there could be savings in public funding support provided for energy use in the country;

(d) In an incentive-based approach, both the costs to the industry, including cost trends, of achieving given energy-efficiency levels, and the actual energy efficiency of the equipment must be taken into account when determining incentive levels; thus, in this approach, targeted levels of incentives for different levels of performance would be provided to the beneficiaries. A beneficiary that has a higher manufacturing capacity could also have a lower cost compared to those with a lower manufacturing capacity due to their respective technology development and adoption capability. If the incentive levels are too low, there will be less interest among industry players to participate in the projects aimed at improving energy efficiency. In addition, incentives should be designed to avoid performance below pre-defined levels and should be adjusted in proportion to baseline and target performance levels. Furthermore, the success of the incentive scheme is closely linked to policies and other measures to ensure sustainable performance in order to ensure that energy-efficient technologies continue to be adopted beyond the project timeframe.

7. In light of the above, an incentive-based approach that is linked to the additional costs/activity levels required to maintain and/or enhance energy efficiency in manufacturing activities is the proposed approach to fund energy efficiency while phasing down HFCs. The operational framework presented in document UNEP/OzL.Pro/ExCom/93/98 also included the manufacturing of components (e.g., compressors, heat-exchangers). However, as decision 93/93(d) makes no reference to options for funding component manufacturing, the Secretariat, in this section, only elaborates on the manufacturing of the five types of equipment, namely: domestic refrigerators; commercial refrigeration – display cabinets; commercial refrigeration – chest freezers; residential air conditioners; and commercial air conditioners.

I.2 Incentive calculation methodology

I.2.1 Types of costs related to energy performance

8. The following paragraphs explain the incentive calculation methodology for the five types of equipment set out in paragraph 7. Annex I to the present document sets out the information that must be provided during project submission for a manufacturing-related project in order to assess its energy-efficiency impact and associated additional costs.[6]

9. Three levels of energy efficiency will be considered for the calculation of the incentive. The current level of energy performance of the equipment, or ***baseline level***, the target that is expected to be achieved by the project, or ***target level*** and the ***target level achieved*** at the end of the project. The baseline and proposed target level would be submitted for project review and presentation to the Executive Committee, and the target achieved would be available after project completion for evaluation purposes.

10. Information on the baseline and target levels proposed[7] for equipment with different capacities in litres or square metres would be provided in the project submission (see annex I to the present document). The target level achieved would be adjusted based on those levels achieved for different products manufactured at the time of project completion. This adjustment is needed to ensure that the actual performance levels at the time of project completion are appropriately reflected for the incentive. The projects to be considered should specify a target performance level above minimum energy performance standards (MEPS), which is the minimum level required under the national regulations.

11. During project submission, each enterprise would submit information on their estimated costs for achieving specified levels of target energy performance. Given the local supply chain and structural factors that affect commercial arrangements between equipment manufacturers and component manufacturers, these costs can vary across projects. There are two types of costs: ***additional capital costs*** (C_t)[8] and ***additional component costs*** (C_e).[9] During the project review process, the Secretariat will carefully review the submitted costs, comparing them with information available from experts, the scientific literature and other, precedent projects, noting that there may be some variation in prices as noted above.

12. The total incentive that would be made available to a manufacturer would be based on the additional capital costs (C_t) and the additional component costs (C_e) to achieve the target level of energy performance.

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[6] Project related to maintaining and/or enhancing energy efficiency while phasing down HFCs.

[7] Capacity in litres would be provided for domestic refrigerators and commercial refrigeration equipment – chest freezers; capacity in square metres would be provided for commercial refrigeration equipment – display cabinets. This is applicable for refrigeration equipment.

[8] Additional capital costs relate to product design for energy efficiency, changes in the manufacturing facilities mainly relating to energy performance testing and upgrades related to the use of more efficient components (e.g., new welding jigs for gaskets), training and third-party product testing and certifications.

[9] Additional component costs would generally relate to energy efficient compressors (e.g., invertor-based compressors), energy efficient heat exchangers, controls.

I.2.2 Domestic and commercial refrigeration

13. The methodology for determining and applying the incentive scheme is given below. The total incentive given to a manufacturer would include both additional capital costs and component costs.

Additional capital costs

14. The maximum additional capital costs would be at the values given in table 1 below for different types of equipment and different manufacturing capacities.[10] As explained earlier, the actual additional costs would be estimated during the project review process, based on the information provided in the project submission on both additional capital costs ($C_{t\text{-submitted}}$) and additional component costs ($C_{e\text{-submitted}}$).

15. When estimating the additional capital costs during the project review process, the $C_{t\text{-submitted}}$ for the project would be compared with the cost given in table 1 for the relevant manufacturing capacity. The lower of either the $C_{t\text{-submitted}}$ or the cost given in the table would be the actual additional capital costs for the project.

Table 1. Overview of additional capital cost for refrigeration equipment

Equipment	**Capacity (units per annum)**	**Additional capital cost (C_t in US $)*****	**Additional capital cost per unit to achieve maximum performance level (US $/unit)**
a	**b**	**c**	**d=c (max) / b (max)**
Domestic refrigerator	< 30,000	100,000	2.5
	30,000 to 100,000	150,000	
	100,000	250,000	
Commercial refrigeration – chest freezers*	< 25,000	100,000	2.4
	25,000 to 75,000	120,000	
	> 75,000	180,000	
Commercial refrigeration – display cabinets**	< 5,000	100,000	16.67
	5,000 to 15,000	150,000	
	> 15,000	250,000	

* This would include refrigerated freezers used to store foodstuff typically at -18°C for long-term storage and/or direct sale.
** This would include refrigerated display (freezer or refrigerator) cabinets (RDCs) "visi-coolers", refrigerated storage (freezer or refrigerator) cabinets (RSCs), refrigerated drink cabinets or beverage coolers (RDC-BCs) "bottle-coolers", ice cream freezer cabinets (RDC-ICFs), scooping cabinets (RDC-SCs), and refrigerated vending machines (RVMs).
*** These costs include costs relating to product design for energy efficiency (US $25,000 to US $100,000), the changes in the manufacturing facilities mainly relating to energy performance testing and upgrades related to the use of more efficient components (e.g., new welding jigs for gaskets) (US $50,000 – US $125,000), training and third-party product testing and certifications (US $25,000 – US $50,000). The costs need to be periodically updated based on cost trends in the market.

Additional component costs

16. The additional component costs would vary depending upon commercial factors linked to commercial contracts, as well as to relationships between component manufacturers and equipment manufacturers, technological development levels at different points in time, and economies of scale. These costs would also vary for different countries according to the industry structure (e.g., number and size of enterprises, technical capabilities of the equipment manufacturers, the industry growth trends) of their equipment-manufacturing industry. The additional component costs allow the methodology proposed to be targeted and to take into consideration the national and even enterprise-level circumstances.

[10] The information in table 1 is based on best available knowledge from industry experts with experience in the manufacturing of these products.

17. When giving the baseline information, the beneficiary enterprise would provide the additional component cost ($C_{e\text{-submitted}}$) value for the targeted maximum energy-efficiency level (E-high) for each relevant type of equipment.

18. The maximum additional component cost (C_e*) is estimated at the values given in table 2 below for the three different types of equipment and three energy-efficiency performance levels. The three energy-efficiency levels are: E-low; E-medium; and E-high. The table also provides additional cost details.

19. It must be noted that the incentive levels (e.g., C_{medium} and C_{high}) would be decided by the Executive Committee; the cost details are provided to facilitate the Executive Committee's decision-making process and without prejudice to the C_{level}[11] that would be decided by the Executive Committee. Experience has shown that the cost of components decreases with time. Accordingly, the Executive Committee may wish to review the C_{level} every three to five years.

Table 2. Target energy performance levels for different equipment and additional component costs (C_e*)

<table>
<tr><th>Particulars</th><th colspan="2">Domestic refrigerator</th><th colspan="2">Commercial refrigeration – chest freezer</th><th colspan="2">Commercial refrigeration – display cabinet</th></tr>
<tr><th></th><th>kWh/year/ litre*</th><th>Additional component cost per unit (US $)</th><th>kWh/year/ litre**</th><th>Additional component cost per unit (US $)</th><th>kWh/day/ m²***</th><th>Additional component cost per unit (US $)</th></tr>
<tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td></tr>
<tr><td>E-low</td><td>1.109</td><td></td><td>1.061</td><td></td><td>15.121</td><td></td></tr>
<tr><td rowspan="2">E-medium</td><td rowspan="2">0.882</td><td>15</td><td rowspan="2">0.822</td><td>15</td><td rowspan="2">10.672</td><td>35</td></tr>
<tr><td>C_{medium}</td><td>C_{medium}</td><td>C_{medium}</td></tr>
<tr><td rowspan="2">E-high</td><td rowspan="2">0.654</td><td>20</td><td rowspan="2">0.583</td><td>20</td><td rowspan="2">6.222</td><td>46</td></tr>
<tr><td>C_{high}</td><td>C_{high}</td><td>C_{high}</td></tr>
</table>

Note: C_{medium} and C_{high} are incentive estimates for achieving the different levels of energy efficiency performance shown in columns (a), (c) and (e); this would be based on the consultations of the incentive levels by the Executive Committee.
* This assumes that the beneficiary produces a mix of domestic refrigerators whose kWh/year/litre has an equivalent MEPS of 1.109 that is equivalent to low energy efficiency levels for that equipment under United for Efficiency (U4E) assessment; feasible best available technology (BAT) is 59 per cent of MEPS according to Europe Ecodesign support documents.
** This assumes that the beneficiary produces a mix of commercial refrigeration – chest freezers whose kWh/year/litre has an equivalent MEPS of 1.061 that is equivalent to low energy efficiency levels for that equipment under U4E assessment; feasible BAT is 55 per cent of MEPS according to Europe Ecodesign support documents.
*** This assumes that the beneficiary produces a mix of commercial refrigeration – display cabinets whose kWh/day/square metre has an equivalent MEPS of 15.121 that is equivalent to low energy efficiency levels for that equipment under U4E model regulation; E-medium and E-high are based on the intermediate- and high-efficiency level suggested by the U4E model regulations for the commercial refrigeration equipment.

20. The E-low is expected to be equal to MEPS in that country. The E-medium is the arithmetic mean between E-low and E-high. While the E-high ideally should be equal to the BAT; due to market factors, this is generally lower than the BAT and progressively moves towards BAT; the values given for E-high are based on BAT as described in the EU regulations for refrigerator and chest freezer as a ratio of the baseline performance.

21. No incentives would be available for equipment that has a target performance below the energy-efficiency level (E-low), as this equipment is not compliant with the MEPS, which is the national regulatory standard for the country.

[11] C_{level} is the actual level of incentive that would be approved by the Executive Committee.

22. When the equipment has a baseline performance between low and medium energy performance levels (i.e., E-low and E-medium) and estimated target performance between E-low and E-medium, the incentive would be proportionate to the energy performance levels. For example, if the energy performance level for a particular beneficiary is 75 per cent of the difference between E-low and E-medium, the levels of incentive would be estimated as 0.75 multiplied by the maximum incentive applicable for reaching the E-medium level of performance (C_{medium}). Similar proportional adjustments would be made if the equipment reaches energy performance levels between E-medium and E-high; in this case, since the enterprise has a baseline performance level between E-low and E-medium, the total incentive would be estimated at the C_{medium} level with a proportion of C_{high}.

23. If the equipment baseline performance is between E-medium and E-high, the incentive would be estimated by taking the total incentive that would be available for the equipment to reach the relevant target level between E-medium and E-high, and subtracting the incentive that would be applicable for reaching the baseline level. This adjustment is done to ensure that the enterprise's higher baseline levels are appropriately accounted for and that the cost of achieving those baseline levels is not double counted.

24. The maximum incentive will be available for enterprises that have equipment with a baseline performance level of E-low and propose to reach a target of E-high. No incentive would be available for enterprises that have a baseline level above E-high, as that would mean that the enterprise already had the necessary capabilities to achieve a high energy-efficiency level.

25. Based on consultations with the industry personnel and technical experts, incentive levels below one third of the additional component costs would not be attractive enough for the industry to participate in the incentive scheme. It is generally expected that the cost of components for energy-efficient performance of different equipment would fall over time due to economies of scale and "learning curve" effect; the costs of new technologies, however, is expected to be high during the introduction phase.

26. Based on the additional component costs given in table 2 above for achieving the maximum target levels (e.g., E-high) committed to under the project for the different types of equipment, the proportion of the actual component costs ($C_{e\text{-submitted}}$) required to achieve those targets would be divided by the maximum additional component cost C_e* (i.e., $C_{e\text{-submitted}}/C_e$*). The result would be the ***cost adjustment ratio*** (R_{cost}). If $C_{e\text{-}submitted}$ is greater than C_e*, R_{cost} would be 1. Conversely, if the $C_{e\text{-}submitted}$ values in certain markets fall lower than C_e*, the R_{cost} would correspondingly fall to values lower than 1. It must be noted that the additional capital costs would be adjusted only for the capacity ranges given above. Furthermore, the methodology of assessing R_{cost} is applicable only for component costs.

27. ***The applicable incentive would be calculated as the product of the R_{cost} (ratio of the actual cost of components to the standard costs given in table 2) and the levels of incentive required to reach the levels of energy performance.*** This approach will ensure that the incentives for actual performance are appropriately adjusted for cost variations for components in different projects in different countries. For example, based on the Executive Committee's decision, if the incentive level for a particular product is US $5 per unit for achieving a specified level of energy performance compared to the baseline, and the R_{cost} is 0.4 because the cost of components in a country is lower than the costs given in table 2 above due to factors indicated earlier, the incentive applicable for the project would be US $2 after adjustment.

28. The following graphs illustrate how the incentive levels would work for two levels of energy performance of domestic refrigerator manufacturers with two different baseline levels. In example 1, the baseline level of energy consumption is 1.1 kWh/litre annually and example 2 is 1.0. In these examples, the way the additional costs would be estimated for different levels of target energy performance is illustrated in the graphs and the total incentive for energy efficiency improvement is calculated based on the following formula:

$$Incentive = \left(C_t + R_{cost} * C_{performance} * Q_{manufactured}\right) \qquad (1)$$

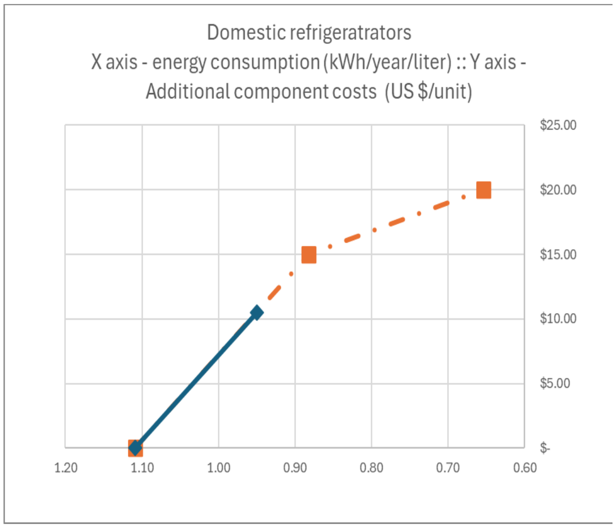
where:

C_t is the minimum of the $C_{t\text{-submitted}}$ and $C_{t\text{-table}}$ which is the standard cost presented in table 1

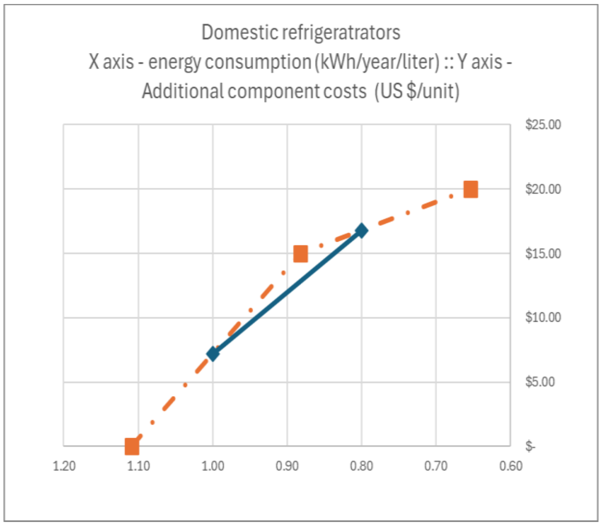
R_{cost} is the additional component cost submitted divided by the C_e* which is the cost incurred to achieve the maximum level of energy performance; this will be calculated as ($C_{e\text{-submitted}}/C_e$*)

$C_{performance}$ is a function of the baseline energy performance of energy efficiency, target level as submitted in the project, and C_{level} which is the maximum incentive applicable for reaching medium or high levels of energy efficiency targets

$Q_{manufactured}$=actual quantity of equipment manufactured with target energy efficiency as submitted



Example 1: Illustration of additional costs (i.e., the difference between the two US $/unit levels for the component costs) to be available for moving from a **baseline of 1.109 kWh/year/litre** to **0.95 kWh/year/litre**; the additional cost for achieving this target compared to the baseline level based on the model would be US $10.51. The dotted line shows cost increases that would occur for higher levels of energy-efficient equipment i.e., equipment with energy consumption of **1.109 kWh/year/litre** and **0.654 kWh/year/litre**.



Example 2: Illustration of additional costs (i.e., the difference between the two US $/unit levels for the component costs) to be available for moving from a **baseline of 1.00 kWh/year/litre** to **0.80 kWh/year/litre**; the additional cost for achieving this target compared to the baseline level based on the model would be US $9.6. The dotted line shows cost increases that would occur for higher levels of energy-efficient equipment i.e., equipment with energy consumption of **1.109 kWh/year/litre** and **0.654 kWh/year/litre**.

I.2.3 Residential and commercial air conditioning

29. The methodology for air conditioning would follow the same basic methodology as for refrigeration equipment, and would be based on the cost values presented in the paragraphs below.

30. The additional capital costs for energy efficiency of the equipment are given in table 3.

Table 3. Target energy performance levels for different equipment and additional capital costs

Equipment	Capacity (units per annum)	Additional capital cost (US $)	Additional capital cost per unit to achieve maximum performance level (US $/unit)
a	**b**	**c**	**d=c (max) / b (max)**
Residential air conditioner	< 30,000	100,000	2.50*
	30,000 to 100,000	120,000	
	100,000	250,000	
Commercial air conditioner	< 10,000	100,000	5.00**
	10,000 to 50,000	125,000	
	> 50,000	250,000	

* For 1.5 TR capacity mini-split air conditioner (AC) unit; additional cost may vary for different cooling capacities.
** For 10 TR packaged AC unit; additional cost may vary for different cooling capacities.

31. The energy performance levels (E-low, E-medium and E-high) would be estimated as the ratio of these levels to MEPS (RE-low, RE-medium, RE-high); this is to account for differences in the energy-efficiency performance ratios (Integrated Energy Efficiency Ratio (IEER), Seasonal Energy Efficiency Ratio (SEER), Combined Seasonal Performance Factor (CSPF), Annual Performance Factor (APF)) used in different countries for measuring energy-efficiency performance.

32. Unlike refrigeration equipment, for which lower energy consumption (i.e., kWh/year/unit capacity) means better energy performance, air conditioning has higher energy-efficiency levels when its energy-efficiency performance ratio (RE-low, RE-medium and RE-high) is higher. Table 4 provides information on the additional costs for achieving different energy efficiency levels compared to the baseline level. The target levels (i.e., low, medium, high) are estimated inputs provided by industry experts and the costs relate to additional costs to achieve those levels of performance.

Table 4. Target energy performance levels for different equipment and additional component costs (C_e*)

Particulars	Residential air conditioner		Commercial air conditioner	
	SEER(compared to MEPS level)	**Additional component cost per unit (US $)**	**IEER (compared to MEPS level)**	**Additional component cost per unit (US $)**
RE-low	1.00		1.00	
RE-medium	1.50	34	1.40	132
		C_{medium}		C_{medium}
RE-high	2.00	45	1.67	176
		C_{high}		C_{high}

Note: C_{medium} and C_{high} are incentive estimates for achieving the different levels of energy-efficiency performance shown in the previous columns.

33. Annex II to the present document provides information on the additional capital costs and the additional component costs for residential air conditioning. The incentive that would be provided for the additional component costs is a function of R_{cost}, along with the methodology for funding based on the energy efficiency performance compared to the baseline level (see equation 1 in paragraph 28). In this annex, the calculation refers to the overall cost needed for an air-conditioning manufacturer to move from the baseline level to the target level of energy efficiency performance. A portion of that cost will be provided as the incentive cost based on the Executive Committee's deliberations.

I.2.4 Conditions for the provision of incentives

34. No incentives would be available for equipment that does not have an established MEPS in the country.

35. In the case of refrigeration equipment, the incentive could be provided for conversion to a refrigerant with low-GWP since the market has already moved to low-GWP refrigerants. In the case of air-conditioning equipment, the incentive would be available for conversion to a refrigerant which provides a path towards compliance with the Kigali Amendment, including the servicing demand for the controlled substances.

36. The duration of the project is a key variable as the energy-efficiency levels of the equipment may rapidly change with time. If project implementation takes longer than three years from the end of the month during which the project is approved by the Executive Committee, the incentive would not be available; any funding provided to the enterprise participating in the project would be returned to the Fund. While the energy efficiency of the equipment can be verified upon completion of the project, the quantity of equipment manufactured for one year after completion of the project would be used to assess the energy efficiency performance.

37. Enterprises would commit to manufacturing equipment with at least the target energy efficiency performance after project completion, and to continue to make best efforts to continue to improve energy efficiency of those products beyond the project duration at its own cost. The performance of equipment covered under the project would be monitored for a period of two years from the date of completion of the project by the national ozone units (NOU) and the agency. This would help in assessing the sustainable implementation of energy efficient technologies.

38. The government would commit to periodically upgrading MEPS regulations, labelling programmes and awareness and information outreach activities to ensure that information on the target energy-efficiency levels under the project for the equipment is publicized among different stakeholders. The government would also take steps to implement regulations to ensure that the manufacturing, import and sale of the equipment would at least achieve the target energy efficiency performance levels, at the latest by three years from the date of completion of the project.[12] This is essential to ensure the sustainability of the project's target energy-efficiency levels by creating a level playing field among enterprises in the product market.

I.3 Non-investment activities

39. The ensuing paragraphs provide an overview of the activities that are not investment related, and that promote capacity building to implement energy-efficiency-related interventions while phasing down HFCs. As explained in document UNEP/OzL.Pro/ExCom/93/98, the costs for non-investment activities would be established through an activity-output-based approach.

Support for SMEs

40. In the context of the Kigali HFC implementation plans (KIPs), SMEs[13] are largely engaged in manufacturing commercial refrigeration equipment, and residential and commercial air-conditioning equipment. The main challenges faced by SMEs, and the type of support that would be needed for the adoption of energy-efficient low-GWP-refrigerant-based equipment are outlined in paragraphs 47 and 48 of document UNEP/OzL.Pro/ExCom/93/98.

41. Regulatory interventions that enforce energy-efficiency standards for all enterprises manufacturing equipment in a specific sector/application are essential to ensure sustainable conversion results.

42. Funding would vary with the number of SMEs that need to be supported in manufacturing in the country. Therefore, a funding modality that varies with the number of SMEs could be considered to address

[12] Ideally, implementing MEPS that would be at least equal to the target level for the project.
[13] Currently, in the context of discussions relating to the cost guidelines for HFC phase-down, issues relating to the definition of SMEs are under discussion.

their support needs. The funding support for these enterprises would be reviewed at the last meeting of 2034 so that any necessary additional support could be provided.

Support for local installation and assembly

43. Background information relating to the local installation and assembly subsector, including the types of equipment and refrigerants, and the challenges involved in transitioning to low-GWP alternatives, has been presented to the Executive Committee (documents UNEP/OzL.Pro/ExCom/92/49 and UNEP/OzL.Pro/ExCom/93/99). Currently, demonstration projects and end-user incentive programmes for these applications can be considered on a case-by-case basis under KIPs (decision 92/39(d)). These activities could also cover energy-efficiency aspects of the design, installation and maintenance of the equipment that is assembled and installed onsite.

44. The main challenges faced by the enterprises engaged in local installation and onsite assembly and the type of support that would be needed for the adoption of energy-efficient low-GWP-refrigerant-based equipment is provided in paragraphs 50 and 51 of document UNEP/OzL.Pro/ExCom/93/98.

45. A funding modality that varies with the number of local installation and onsite assembly enterprises could be considered to address their support needs. The funding support for these enterprises would be reviewed at the last meeting of 2034 so that any necessary additional support could be provided.

Servicing sector support

46. Under KIP implementation, countries are expected to include capacity-building activities for the servicing sector. The main challenges faced by the enterprises engaged in the servicing sector, information on the support available to the servicing sector that could contribute to energy efficiency, and the type of support that would be needed for the adoption of energy-efficient low-GWP-refrigerant-based equipment is provided in paragraphs 53 to 55 of document UNEP/OzL.Pro/ExCom/93/98.

47. The funding requirements for maintaining energy efficiency could be considered at a percentage of the levels agreed under decision 92/37 for countries with a consumption of less than 360 mt of HFCs in servicing in the baseline years, and at pre-defined levels for countries with consumption above 360 mt, on the understanding that the training activities for the servicing sector would only be provided under the KIP. Any additional activities relating to energy efficiency in the servicing sector would be those mentioned in paragraph 55(a) to (d) of document UNEP/OzL.Pro/ExCom/93/98, and the project funding would be utilized to maximize complementarity with the existing HFC phase-down activities. This approach would result in a simple project funding approach for energy efficiency during stage I of the KIP which could, in future, be further adjusted based on experience implementing stage I of the KIP and future implementation needs.

Regional/national testing centres

48. The main aspects relating to establishing and operationalizing regional/national testing centres and the type of support that is needed, including aspects relating to the sustainable operations of such regional/national testing centres, are provided in paragraphs 58 to 60 of document UNEP/OzL.Pro/ExCom/93/98.

49. The Executive Committee could also consider a limit to the number of regional testing centres that could be funded in each region.[14] Partial funding for infrastructure support for an existing centre that is undertaking testing could also be considered. As mentioned in document UNEP/OzL.Pro/ExCom/93/98, these centres should have a strong business model for financial and business management for sustainable

[14] The funding requirement for national testing centres would be considered on a case-by-case basis.

operations. The funding support for these centres would be reviewed at the last meeting of 2034 so that any necessary additional support could be provided.

<u>Regional centres of excellence for technical and policy assistance</u>

50. Regional centres of excellence for technical and policy assistance that could serve different countries and/or different regions in a country can be designed to provide sustained technical support for implementing energy-efficiency activities while phasing down HFCs. An illustrative list of activities that could be supported by these centres could include the following:[15]

(a) Training of experts/trainers on energy-efficiency best practices for the installation and servicing of RACHP equipment using different refrigerant technologies;

(b) Training of experts/trainers on the enforcement of energy-efficiency policies and regulations, and monitoring;

(c) Technical support related to energy-efficient equipment design and product manufacturing-related technical support for SMEs, including providing support for promoting energy-efficient low-GWP-refrigerant-based technologies with partner technology providers (e.g., technology providers that have low-GWP energy-efficient technologies can use these centres as platforms for product promotion, testing and training); and

(d) Collection and organization of national and/or regional market information on energy-efficiency aspects relating to RACHP equipment, and on low-GWP energy-efficient alternative technologies in different applications and uses for future policy development and project interventions.

51. The main advantages of setting up these regional centres are:

(a) In-house infrastructure and technical support for the adoption of new/emerging low-GWP-refrigerant-based energy-efficient technologies, particularly for small and informal enterprises, as well as support on policy matters relating to Montreal Protocol;

(b) Locally accessible infrastructure and technical personnel available to provide training and technical support to technicians, resulting in cost-effective delivery of training and technical support programmes;

(c) Networking with industry and service providers for better outreach on technologies (e.g., energy-efficient safe performance of equipment using new technologies, network of equipment/component suppliers with users);

(d) Establishing local expertise to cater to national and regional market needs based on in-depth understanding of market barriers, technology availability and accessibility, local workforce capacity, and local environmental conditions; and

(e) The evolution of these centres into knowledge centres/innovation centres, over time, for continued support to local stakeholders on technical and policy issues including product design and local adaptation of technologies in a cost-effective manner.

[15] Some of these aspects relating to the regional centres of excellence for technical and policy assistance are covered in document UNEP/OzL.Pro/ExCom/93/98; the paragraphs in this section provide additional information relating to these centres of excellence.

52. It is expected that during KIP implementation, sub-national centres of excellence would be established to provide training and other technical support. However, these centres are expected to focus on HFC phase-down-related technical and policy support. Additional complementary technical assistance to support one or more of those centres in providing services relating to energy efficiency can be considered.

53. Under this project component, funding would be made available where there is a demonstrated need and there is an operational business model. The funding support would be subject to review in 2034.

54. The additional cost of providing support to a centre, including equipment support and initial training support for technical experts and a select number of trainers could be considered for a limited number of such centres. As mentioned in UNEP/OzL.Pro/ExCom/93/98, these centres should have a strong business model for financial and business management for sustainable operations.

<u>Feasibility study on district cooling</u>

55. District cooling projects[16] can provide opportunities for the adoption of energy-efficient low-GWP-refrigerant technologies. As explained in paragraph 28(s) of document UNEP/OzL.Pro/ExCom/91/64, these projects would have large funding requirements and may involve complex business models, depending on project size. The operationalization of these projects could also involve a large number of stakeholders (e.g., local government municipal bodies, local and international funding institutions, operations and maintenance contractors).

56. Funding for project preparation for district-cooling project could be considered at fixed amount for projects demonstrating strong national commitment through policies and regulatory support for district cooling where such project preparation funding is not available for those projects.[17] The evaluation would be based on the project funding requested in US $/kWh saved as a result of the project, and on the extent to which the project would promote the adoption of low-GWP refrigerants. Strong national commitment is needed, with active participation by service providers in investing and in operating these facilities.

<u>Retrofitting large refrigeration and air-conditioning systems with energy-efficient alternatives</u>

57. Retrofitting large refrigeration and air-conditioning (RAC) systems with energy-efficient alternatives would result in reducing the dependence of such equipment on technologies that use high-GWP refrigerants and are not energy efficient. Like district cooling projects, these projects could involve large funding requirements. They would also require careful planning and execution and would largely be driven by national regulatory requirements and/or operational cost savings generated by the new energy-efficient technologies.

58. Funding project preparation for the design of retrofitting projects could be considered on a case-by-case basis based on the number of enterprises that would participate, where project preparation funding support is not available for those projects.[18] The evaluation would be based on the project funding requested in US $/kWh saved as a result of the project, and on the retrofitting activities’ impact on the adoption of energy-efficient technologies, giving priority to projects that involve conversion to low-GWP refrigerants at the national and regional/global level (e.g., scaled-up adoption, replicability).

[16] While referring to district cooling, the projects need not necessarily be for a large residential district; this can also include a large-scale cooling infrastructure (1,000 TR and above) that would use low-GWP refrigerant and provide cooling service to multiple areas in the identified facility.
[17] Inputs from industry experts show that project preparation funding for these projects is generally integrated into the overall project costs and is often available to the project proponents.
[18] Inputs from industry experts shows that project preparation funding for these projects are generally integrated into the overall project costs and are often available to the project proponents.

Capacity building and technical assistance for national funding institutions on energy efficiency in the context of HFC phase-down

59. Capacity building and technical assistance for national financial institutions would help accelerate the scaled-up adoption of energy-efficient low-GWP-refrigerant-based technologies in different applications to the extent feasible. While MLF-funded activities provide some support for the replacement of high-GWP HFC-based equipment and the demonstration of low-GWP refrigerant-based energy-efficient technologies, the national funding institutions could play a key role in scaling up adoption of the technology and addressing HFC phase-down in a holistic manner.

60. From the information available from implementing agencies and technical experts, it is understood that the national financial institutions participate only to a limited extent in RACHP equipment financing primarily because of limited capacity building relating to impact of RACHP equipment financing that could be structured to promote low-GWP refrigerant-based technologies and other conflicting priorities for financing. Additional capacity-building support specifically targeted to engage these institutions in supporting activities for adopting energy-efficient low-GWP-refrigerant-based technologies can result in higher levels of interest on the part of these institutions in participating in funding energy-efficient RACHP equipment and accelerating the adoption of those technologies.

61. Additional funding for training and capacity building of the financial institutions could be considered. More details relating to low-cost funding through a revolving fund are provided in paragraphs 76 to 98 of the document.

Project preparation funding for projects under the operational framework for energy efficiency

62. Project preparation funding for projects under the operational framework for energy efficiency would be required for the preparation of a detailed plan for maintaining and/or enhancing energy efficiency in the context of HFC phase-down.[19] Keeping in view the need to ensure quality projects on energy efficiency under the operational framework, project preparatory funding at levels proportional to the funding provided for preparatory activities under decision 91/66 could be considered.

63. In the case of countries where KIP preparation is ongoing, the existing investment-project funding could be used to prepare energy-efficiency-related additional components under the operational framework. In the case of countries where KIP preparation has been completed and where investment projects for energy efficiency are needed, a percentage of the funds agreed (e.g., 25 per cent of the funds agreed) in decision 87/50(f) could be considered for the preparation of individual investment projects.

64. As mentioned earlier, integrated implementation of HFC phase-down and energy-efficiency components would result in cost-effective project implementation and would maximize opportunities. Projects for the energy-efficiency component need to be designed in such a way as to ensure the adoption of an integrated approach to implementing both the energy efficiency component(s) and the HFC phase-down component(s).

I.4 Potential modalities for monitoring and reporting on project-level progress and for evaluating outputs/outcomes

65. Table 5 presents information on project monitoring reports and the payment process for different interventions. In addition to achieving specific project outputs, satisfactory implementation of regulations to promote the adoption of low-GWP-refrigerant-based energy-efficient technologies is critical.

[19] Requests for project preparation have been submitted in relation to pilot projects on energy efficiency under decision 91/65.

Table 5. Project-level monitoring reports for the evaluation of outputs/outcomes and payment process[20]

Interventions in sectors	Reporting and payment

Investment/manufacturing of equipment (domestic refrigeration equipment, self-contained commercial refrigeration equipment, residential AC equipment, commercial AC equipment)
 	
(Incentive-based)
	Reporting
	• Baseline information on energy performance[21] assessed during submission based on the manufacturing and sale of relevant equipment.
	• Upon project completion, the target performance level based on the manufacturing and sale of relevant equipment would be assessed.
	• Report on the implementation of MEPS, current levels compared to baseline levels during the project submission, the inclusion of refrigerant GWP levels in energy-efficiency performance standards and other measures (e.g., labelling programmes including refrigerant GWP, product registry on low-GWP-refrigerant-based energy-efficient equipment) for promoting the adoption of low-GWP-refrigerant-based energy-efficient technologies. This would be based on the submission of a progress report demonstrating satisfactory project progress.
	
	Payment
	• The additional capital cost for the project would be made available to the beneficiary up-front for project implementation.
	• Based on performance, the component incentive would be made available to the beneficiary according to Executive Committee guidelines; it is the incentive after adjustment for actual costs and performance levels as earlier, would be provided and would be paid in two tranches:
	
	  • 50 per cent of the component cost incentive would be provided upon project completion with confirmation on achievement of levels of energy efficiency improvement achieved.
	  • The remaining 50 per cent of the component cost incentive would be provided one year after completion of the project after confirmation of total quantities manufactured at the target energy efficiency performance levels, at least equal to baseline quantities manufactured for those equipment.

Non-investment/technical assistance for SMEs (Activity-output-based)	**Reporting** • Project outputs/outcomes for different activities would be monitored by the implementing agency and periodic reports would be provided by the agency; this would cover agreed activities included in the project. • Enterprise-level verification would be undertaken through a sampling method and a self-declaration process regarding the achievement of targets; regulations would need to be implemented at the national level to ensure that energy performance targets are achieved. • Report on the implementation of MEPS, current levels compared to baseline levels during project submission, the inclusion of refrigerant GWP levels in energy-efficiency performance standards and other measures for promoting the adoption of low-GWP-refrigerant-based energy-efficient technologies. **Payment** • Percentage (e.g., 80 per cent) of total funding paid up-front to the country upon project approval.[22]

[20] UNEP/OzL.Pro/ExCom/91/64
[21] The energy performance assessment would be undertaken either by an accredited laboratory at the enterprise or an external laboratory.
[22] This assessment is made assuming a time period of five years for project implementation; at the end of the third year, a detailed progress report on the project could be provided and the remaining funding could be disbursed based on satisfactory project progress.

Interventions in sectors	Reporting and payment
	• Remaining amount to be paid upon achievement of project activity output indicators.
Non-investment/technical assistance for local assembly and installation (Activity-output-based)	**Reporting** • Project outputs/outcomes for different activities would be monitored by the implementing agency and periodic reports would be provided by the agency; this would cover agreed activities included in the project. • Report on the implementation of MEPS, current levels compared to baseline levels during project submission, the inclusion of refrigerant GWP levels in energy-efficiency performance standards and other measures for promoting the adoption of low-GWP-refrigerant-based energy-efficient technologies. **Payment** • Percentage (e.g., 80 per cent) of total funding paid up-front to the country upon project approval. • Remaining amount to be paid on achievement of project activity output indicators. This would be based on the submission of a progress report demonstrating satisfactory project progress two years prior to project completion date.
Non-investment/ servicing sector support (Activity-output-based)	**Reporting** • Project outputs/outcomes for different activities would be monitored by the implementing agency; this would cover agreed activities included in the project. • Report on the implementation of MEPS, current levels compared to baseline levels during project submission, the inclusion of refrigerant GWP levels in energy-efficiency performance standards, the implementation of certification system for technicians and other measures for promoting the adoption of low-GWP refrigerant-based energy-efficient technologies. **Payment** • Percentage (e.g., 80 per cent) of total funding paid up-front to the country upon project approval. • Remaining amount to be paid on achievement of project activity output indicators. This would be based on the submission of a progress report demonstrating satisfactory project progress no earlier than two years prior to project completion date.
Non-investment/ support for testing centres and centres of excellence (Activity-output-based)	**Reporting** • Project performance of different activities relating to the establishment and operation of the testing centres and centres of excellence would be monitored by the implementing agency; this will also include how the testing centre or centre of excellence is performing against the submitted business plan. **Payment** • Percentage (e.g., 80 per cent) of total funding paid up-front to the country upon project approval. • Remaining to be paid on achievement of project activity output indicators. This would be based on the submission of a progress report demonstrating satisfactory project progress no earlier than two years prior to project completion date.
Non-investment/ support for feasibility studies for district cooling and for retrofitting existing equipment (Activity-output-based)	**Reporting** • Project report of the feasibility study undertaken, including information on awareness and outreach on the feasibility study results. **Payment** • 100 per cent of total funding paid up-front to the agency, provided there is a strong commitment from the government, and service providers are actively

Interventions in sectors	Reporting and payment
	engaged in developing/participating in the projects, and upon confirmation that this activity is not funded from other sources.
Non-investment/ energy-efficiency project preparation funding	**Reporting** • Implementation plan for energy-efficiency activities under the operational framework for the consideration of the Executive Committee in line with the guidelines approved by the Executive Committee. **Payment** • 100 per cent of total funding paid up-front to the agency, provided there is a strong commitment from the government and end users to implementing these projects, and upon confirmation that this activity is not funded from other sources.
Project preparation for maintaining and/or enhancing energy efficiency while phasing down HFCs	**Reporting** • Implementation plan for energy-efficiency activities under the operational framework for the consideration of the Executive Committee in line with the guidelines approved by the Executive Committee. **Payment** • 100 per cent of total funding paid up-front to the agency, provided there is a strong commitment from the government and end users to implementing these projects, and upon confirmation that this activity is not funded from other sources.

* In the case of SMEs, the project monitoring for equipment manufacturing activities would be defined under the project.

II. Estimation of energy-efficiency gains in kWh/year and climate benefits in carbon dioxide equivalent

Energy efficiency gains in kWh/year for manufacturing projects

66. In the case of investment projects, the project performance in terms of energy-efficiency gains (i.e., kWh/year) would be available through the relevant bilateral and/or implementing agency based on project reports. In addition, the revisions of MEPS for the specific categories of equipment over the project's life would also be available through the project reports. These two parameters would be the primary outputs that would be used to measure energy-efficiency gains from the project. For air-conditioning equipment, estimates of energy-efficiency gains would be based on annual operating hours as prescribed in the national standard.[23]

67. In addition, a report on the implementation of MEPS, current levels compared to baseline levels during project submission, the inclusion of refrigerant GWP in energy-efficiency performance standards, the implementation of a certification system for technicians and other measures to promote the adoption of low-GWP-refrigerant-based energy-efficient technologies, would provide information on trends in improving energy efficiency while phasing down HFCs.

68. The other outputs relating to the activities undertaken (e.g., awareness and outreach on the project by the enterprise, NOU and other relevant stakeholders, upgradation of MEPS standards, growth in market share for energy-efficient low-GWP-refrigerant-based equipment)[24] would also provide information on the project's broader impact, but they would not be used for assessing project performance.

[23] If the annual operating hours are not prescribed in the corresponding standard, ISO 16358 and the corresponding test method of ISO5151 standards may be used.

[24] This needs to be captured by developing a detailed data-management system for manufactured/imported equipment and their energy-efficiency levels; since it could take time to implement this system, best estimates of energy-efficient equipment sales by type of equipment could be provided in the interim period.

Climate benefits in terms of CO_2-equivalent

69. The reduction in CO_2 emission achieved through the adoption of energy-efficient equipment is directly related to *inter alia* the carbon intensity (i.e., kg CO_2 emissions/kWh) of the sources of energy at the user level, as well as the annual operating hours of the equipment, and other factors. The diversity of energy sources where the product is going to be used, the energy consumption levels that are driven by user characteristics, the price of electricity, use of a combination of different cooling equipment (e.g., fan and air-conditioner combination) makes it challenging to calculate the benefits from reduced indirect CO_2 emissions.

70. Information on the carbon intensity of electricity generation (i.e., kg CO_2 emissions/kWh), both the global average and the national average of the country where the project is being implemented, could be used to assess the CO_2-emission impact of manufacturing projects. However, while reporting could include both a global average and a country-specific carbon intensity, the Secretariat suggests that the Executive Committee consider using a globally averaged power grid carbon intensity when evaluating projects. Servicing sector projects could use a model that would provide a broad estimate of total electricity consumption in cooling applications and the trends over time of electricity consumption, as well as the tonnes of CO_2 emission reduction based on electricity consumption reduction in kWh/year and the carbon intensity of electricity generation in the country.

71. It must be noted that these values are intended to present a broad idea of the impact of carbon emission savings, and that carbon emission savings at the specific user level can vary depending upon the factors explained above.

72. Further, the energy-efficiency gains in kWh for manufacturing activities can be measured at the project level. However, when these activities are combined with servicing sector and other activities, project-level measurement of the gains from each separable component of the project would become complex. Therefore, the impact of the non-manufacturing activities (e.g., servicing sector), when implemented alone or in combination with manufacturing activities, needs to be measured based on broader national regulatory standard development and/or implementation, and on estimates using customized mathematical models that capture surrogate energy-efficiency-driver variables (e.g., MEPS upgradation, market share of energy-efficient RACHP equipment, sample-based reduction in energy consumption in RACHP equipment at a user level).

III. The specific roles of national ozone units and of bodies regulating energy efficiency

73. NOUs[25] are responsible for implementing Montreal Protocol activities in the country. The bodies regulating energy efficiency *inter alia* include energy-efficiency-standard development and implementation organizations; organizations involved in national standard development and implementation; regulatory bodies for energy generation including those that regulate renewable energy; technical institutions associated with the development and implementation of energy efficiency; organizations that monitor regulations relating to energy efficiency; and other organizations that promote specific sectors that have high energy consumption (e.g., the building sector, agriculture and horticulture, food processing and storage, cold chain including the retail sector). The number of such organizations and their roles would vary from country to country. The mandates of these organizations and their governing structures organizations also vary and could fall outside the purview of the authorities managing Montreal Protocol activities. Furthermore, while implementing projects relating to energy efficiency funded through non-MLF funding institutions (e.g., the Global Environment Facility, bilateral donors), different organizations develop and implement activities in line with the overall objectives of those projects and their own mandates. While these projects have specific objectives that generally involve stakeholders who are not involved in Montreal

[25] While these units are called NOUs, they handle all activities relating to the Montreal Protocol.

Protocol activities, one or more of the components of these projects could directly relate to activities implemented under the Montreal Protocol.

74. The Executive Committee, in the recent decisions relating to energy efficiency in the context of HFC phase-down, has taken decisions that make it necessary to strengthen coordination and collaboration with energy-efficiency-related bodies.[26] While implementing activities relating to HFC phase-down, and to ensure that energy efficiency is promoted in parallel or integrated with the KIP, the following could be considered to strengthen coordination and collaboration, keeping in mind the roles of the NOUs and of the bodies regulating energy efficiency.

(a) Including relevant energy-efficiency-promoting bodies in the national ozone committees or equivalent that provide overall technical and policy guidance for implementing Montreal Protocol activities;

(b) Having NOUs participate in relevant committees dealing with the energy-efficiency standards of RACHP equipment and provide inputs to ensure that refrigerant standards and higher levels of MEPS for RACHP equipment are appropriately included in the standards;

(c) Continuous engagement with different energy-efficiency authorities through periodic consultations on Montreal Protocol activities and information sharing on how energy-efficiency promotion measures can be supported during the implementation of Montreal Protocol activities. National Cooling Action Plans (NCAPs) provide a useful platform for defining processes for collaboration between NOUs and energy-efficiency regulating bodies;

(d) Coordination with national institutions implementing projects with non-MLF funding sources that deal with energy efficiency through periodic information sharing on different projects; and

(e) Involving national financial institutions, to the extent feasible, to promote energy efficiency in the context of HFC phase-down, which *inter alia* includes financing RAC applications.

75. Keeping in view the above, the role of the NOUs and the other bodies relating to energy efficiency could be considered as follows:

<u>Role of NOUs</u>

(a) Planning and overseeing the implementation of project activities in the context of reducing consumption of controlled substances in line with the Montreal Protocol targets, including project activities relating to energy efficiency funded through the MLF;

(b) Coordinating with national stakeholders on the implementation of the different projects relating to energy efficiency while phasing down HFCs;

(c) Reporting on project progress and energy-efficiency performance to different stakeholders based on performance parameters for energy efficiency defined under the different projects; and

(d) Participating in consultations with different national institutions handling energy efficiency on issues that would relate to refrigerant quality and the energy efficiency of RACHP equipment.

[26] Decisions 89/6 and 91/65

Role of bodies regulating energy efficiency

(a) Developing and implementing national regulations (e.g., energy standards, labelling and other measures), including periodic upgradation and the inclusion of refrigerant GWP levels in energy-efficiency performance standards to ensure compliance with the HFC phase-down schedule; this would include incorporating provisions relating to the Montreal Protocol in relevant national regulations relating to energy efficiency;

(b) Including relevant Montreal Protocol aspects in project design and implementation for activities relating to energy efficiency;

(c) Including the NOU in different national decision-making bodies (e.g., energy-efficiency standard development authorities); and

(d) Participating in different Montreal Protocol project oversight committees and providing inputs/support for project activities.

IV. Operationalization of revolving funds for energy efficiency while phasing down HFCs

IV.1 Review of existing models of revolving funds

76. In preparing the present document, the Secretariat reviewed multiple reports and websites related to revolving funds from a variety of sources.[27] There can be various forms of revolving funds, with the main categories being internal and external revolving funds. For an internal revolving fund, a government, industry or enterprise may set up a fund to be lent internally across departments, agencies, or commercial branches. An external revolving fund is established as a legal entity with a formal governance structure to finance stakeholder projects in particular sectors. External revolving funds typically provide low-interest loans where the repayment is reinvested into new projects. When a financial institution (e.g., a national bank) is involved, the fund could be structured differently depending on market needs and the financial products available from the funding institution.

77. External revolving funds for energy efficiency typically provide project loans that are repaid from the actual energy cost savings and are typically used in sectors such as the public sector and residential multifamily dwelling sector. In certain countries like the United States of America, municipalities and universities have successfully used internal revolving funds on projects to meet energy-efficiency and sustainability goals. The successful implementation of a revolving fund requires a supportive legislative and regulatory environment for financial monitoring, safeguards and controls. Furthermore, it is important to identify demand on the part of potential beneficiaries, and to include a capacity-building component for beneficiaries and/or other stakeholders. Typical repayment periods tend to be between five to eight years. Factors like low energy prices and chronic underheating/cooling in the market, or a low level of beneficiary and stakeholder awareness can result in slower implementation in some cases.[28] Proper training on monitoring practices may be an additional requirement in the process of using these funds.

[27] Such as reports by the World Bank/World Bank Group/International Finance Corporation, UN-Habitat and evaluation reports from the Multilateral Fund Secretariat related to chiller investment projects as well as websites and advice published by the US Department of Energy, the National Association of State Energy Officials, the Environmental Protection Agency, the Canadian Green Municipal Fund, Export Development Canada Revolving Fund, a peer reviewed article on a revolving housing fund in Europe, Energy Cities (network of Municipalities in the European Union) and other sources.

[28] For example, in one case the implementation was delayed because stakeholders did not immediately see the benefit of participating in the projects; however, this barrier was corrected in later stages through awareness activities. Additionally, prospective bidders in the procurement of a construction firm required capacity building due to the innovative procurement schemes used, which based selection on the highest net present value of the bids.

78. These findings are consistent with the lessons learned from projects funded by the Multilateral Fund. Projects involving chiller replacements have been approved in the past by the Executive Committee and three of these projects tested revolving-fund schemes (i.e., Mexico, Thailand, and Türkiye). At the first evaluation[29] of chiller projects, the projects were seen as partial success. In all three cases, the number of chiller projects amounted to a very small portion of the total chillers in those countries, implementation was slower than anticipated, and the replacement targets were not met. The report concluded that future projects using this kind of financial mechanism should require evidence that the mechanism would be supported by ample demand from potential beneficiaries, which is similar to the findings in other reports regarding the importance of identified demand on the part of potential beneficiaries. Additionally, the level of commitment from the governments for action beyond the timeframe for implementing the revolving funds was limited.

79. In the second evaluation report on chiller projects,[30] one overall finding was that in some cases, the absence of an energy policy, the weakness and/or absence of a regulatory framework for supporting energy efficiency, and the absence of a strong lead organization hampered project implementation. The absence of a strategy to educate various stakeholders on the benefits of energy-efficient chillers further acted as a barrier to larger-scale adoption. It was also noted that one cause for delays in some projects which had co-funding was the time needed to synchronize project cycles and the requirements/conditions imposed by various implementing and funding entities.

IV.2 Overall operational process for consideration of a revolving fund

<u>Overview</u>

80. The funding proposal for a Multilateral Fund revolving fund would be submitted by the implementing agency with endorsement from a national government. The proposal would include *inter alia* information on the proposed financial institution that would be involved in operationalizing the revolving fund; the governance structure for managing this fund; the Government's commitment to enhancing energy-efficiency standards in the country for the relevant RACHP products covered by the fund; a supportive regulatory environment either in place or under implementation for financial management and reporting; a business case outlining the target sector specifically addressing the HFC phase-down and energy-efficiency prioritization of that sector; a demonstration of existing demand from beneficiaries and those that have potential for ensuring scaled-up adoption of the energy-efficient products in the proposed applications, based on a market survey undertaken during the KIP; and market and risk assessments associated with implementing the revolving fund. The identification of a financial institution would be in consultation with the NOU and would be based on the client portfolio and strategic priorities of the financial institution and its level of commitment to supporting the implementation of the revolving fund.

81. It should be noted that experience is likely to be limited in many countries when it comes to implementing such a fund with a focus on RACHP equipment for phasing down HFCs. Therefore, different steps relating to awareness and outreach on the benefits of the revolving fund in terms of environmental and financial benefits, as well as training and capacity building for financial institutions and other similar capacity-building activities need to be undertaken during project preparation and implementation. In-depth consultations with the funding institutions are critical to ensure that they understand the expectations from the project and that their commitment is obtained.

<u>Main aspects relating to making a revolving fund operational</u>

82. The governing body of the revolving fund would involve, *inter alia*, representatives from the NOU or the Ministry monitoring NOU operations, the implementing agency, a representative from the relevant

[29] UNEP/OzL.Pro/ExCom/58/9
[30] UNEP/OzL.Pro/ExCom/68/10

energy-efficiency regulatory authority, a fund manager to manage the revolving fund, and other relevant stakeholders based on national circumstances. The governing body would develop and monitor the overall strategic plan for implementation of the revolving fund in accordance with the conditions for approval of access to this fund determined by the Executive Committee;[31] the operationalization of the revolving fund including relevant risk management processes would be managed by the fund manager of the financial institution(s) implementing the revolving fund.

83. Regular meetings of the governing body and consultations with the financial institution are a critical component for supporting project implementation. Consultative meetings could be scheduled every six months to discuss different strategic and operational aspects relating to the revolving fund (e.g., use of funds by beneficiaries, success stories, key challenges and mechanisms to address those challenges, inclusion of new instruments for funding the sectors covered).

84. Targeted areas for capacity building and awareness raising should also be included in the project proposal and should be funded through the project. The proposal should identify how these activities would result in successful implementation of the revolving fund. These capacity-building activities are critical for the successful implementation of the revolving fund and the achievement of the relevant outcomes.

85. The programme support costs for the project would be 7 per cent, given the more limited role in project implementation.

86. Flexibility could be provided for the capitalization of revolving funds from different sources, while noting that project implementation should be synchronized to ensure timely achievement of results. This is critical to avoid the risk of non-availability of alternative additional sources, and the risk of imposing additional conditions that could affect project implementation through the revolving fund.

Sectors covered, refrigerant standards and beneficiary categories

87. The coverage of the revolving fund would be based on the market assessment, as explained earlier; the potential beneficiaries in relevant applications would be identified based on said market assessment. The prioritization of applications could be finalized by the governing body of the revolving fund and would be directly linked to the KIP implementation strategy for HFC phase-down. The revolving fund's coverage might include commercial refrigeration equipment, industrial refrigeration equipment and residential and commercial air-conditioning equipment, given that these sectors generally have the highest consumption of HFCs. There could be component suppliers (e.g., large compressor manufacturers for industrial refrigeration, condensing unit manufacturers) who could also be covered; the coverage needs to be analysed on a case-by-case basis.

88. The proposed choice of refrigerants would include only those refrigerants that are in line with the technology strategy and relevant technical and market factors.

89. The beneficiaries could be end-users or equipment/component suppliers. As an example, one equipment supplier (e.g., a condenser manufacturer) might use this fund to market their low-GWP refrigerant-based energy-efficient components. The beneficiaries should demonstrate the impact of using the proposed equipment funded with support from the revolving fund, in terms of direct and indirect kWh savings.

90. The credit checks of potential beneficiaries and other relevant parameters that relate to financing would be undertaken by the financial institution administering the revolving fund. Market access, credit evaluation capabilities and innovative financial instruments are key factors that drive the involvement of

[31] The main objective of the revolving fund is to incentivize adoption of sustainable energy-efficient technologies that would contribute to HFC phase-down in the identified applications.

national financial institutions. The choice of financing product should be selected in consultation with the financial institution based on the suitability for the market and stakeholders (e.g., energy savings agreements, debt financing, guarantees, budget capture, and forfeiting).

91. The duration of repayment period for funds borrowed from the revolving fund would relate to the payback period determined by factors such as the client's business performance and returns from energy savings that would be driven by the price of energy. Focusing on projects with a payback period of less than half of the equipment's life could be considered.

92. Given limited experience with the operationalization of such a fund, the revolving fund duration would be for the duration of the specific stage of the KIP. This can be extended beyond the specific stage based on a review by the Executive Committee of the performance of the revolving fund and the structure of the market at the end of that specific stage.

Monitoring and reporting

93. Monitoring and verification are vital components of revolving funds. Data collection and reporting requirements would depend on the project implementation structure of the revolving fund.

94. Prior to project funding, the proposals submitted by prospective beneficiaries would be evaluated *inter alia* on performance parameters relating to the energy efficiency and the type of refrigerants adopted. Upon project implementation, the project beneficiary would submit a report on the energy performance and the refrigerant used through an independent technical verifier/agency. Further, the beneficiary would commit to monitoring the refrigerant servicing needs; monitoring the energy performance of the equipment replaced through the project fund from the revolving fund for a period of two years; and supporting outreach and awareness activities to the extent feasible regarding their experience in adopting the different energy-efficient technologies. These reports would be consolidated and submitted by the financial institution to the implementing agency and the NOU on a semi-annual basis.

95. The implementing agency would report to the Secretariat on the revolving fund on a biannual basis in consultation with the financial institution and the governing body established for the fund, providing the following information:

(a) Sector(s)

(b) Number of project proposals from interested beneficiaries

(c) Number of approved projects and number completed and under implementation

(d) Type of equipment

(e) Baseline and new refrigerants used

(f) Baseline and current energy consumption or energy-efficiency level

(g) Total cost of equipment in local currency and US $ equivalent

(h) Total support from the revolving fund in local currency and US $ equivalent

(i) Interest rate to the borrower through the funding mechanism

(j) Market interest rate for an equivalent transaction

(k) Repayment default, if any, and the value of unpaid revolving fund amounts in US $

(l) Cumulative default value in local currency and US $ equivalent

Risk management

96. The financial management and risk management of the revolving fund would be the purview of the financial institution as they are better equipped in terms of processes and structure for managing risks. In this context, it is essential to involve an experienced financial institution that has good financial risk management capacity (e.g., management of credit risks of clients, exchange rate risks) and a network for reaching out to different clients (e.g., users of commercial refrigeration equipment in supermarkets, retail consumers buying energy-efficient products, technical experts to assess technology risks if needed) in running the revolving fund.

Potential implications

97. Funding provided by the Multilateral Fund can assist countries that are using the revolving fund in adopting energy-efficient technologies. The funds available through the revolving fund would be used to implement activities in accordance with the Executive Committee guidelines for using the revolving funds. It must be noted that the revolving funds work more like “soft-loans” (i.e., funds available at zero interest rate in US dollars) and hence, the funds are expected to be returned back to the MLF once the revolving fund’s operational period is completed.

98. The implementing agencies would need to work with the NOU to identify the national funding institution(s) that could operationalize the revolving funds. The implementing agency would:

(a) Work with the NOU and other relevant national stakeholders on the implementation plan for the revolving fund;

(b) Provide inputs and participate in the meetings of the national committee that supervises and monitors the activities relating to the revolving fund;

(c) Provide technical assistance to the fund managers and other relevant officers on technical aspects and implementation processes for the revolving fund, including risk management; and

(d) Work with the NOU on reporting on the activities undertaken using amounts from the revolving fund, and on the performance of the revolving fund.

V. Recommendation

99. The Executive Committee may wish:

(a) To note the information provided in document UNEP/OzL.Pro/ExCom/94/61 further elaborating the operational framework to support maintaining and/or enhancing energy efficiency described in document UNEP/OzL.Pro/ExCom/93/98 covering aspects mentioned in decision 93/93(d);

(b) To consider whether:

(i) To use the operational framework on energy efficiency while phasing down HFCs elaborated in paragraphs 8 to 38 of the document referred to in sub-paragraph (a) above for projects for enhancing energy efficiency in the manufacturing of domestic refrigerators, commercial refrigeration – display cabinets, commercial refrigeration – chest freezers, residential air conditioners, and commercial air conditioners, including any pilot projects pursuant to decision 91/65 for the manufacturing of that equipment, for an initial period of [three years];

(ii) To request the Secretariat to further elaborate on the operational framework on energy efficiency while phasing down HFCs, for the 95th meeting on:

a) Costs for maintaining and/or enhancing energy efficiency in non-manufacturing activities covered in section I.3 of the document referred to in sub-paragraph (a) above; and

b) Criteria for considering projects for using the revolving fund covered in section IV of the document referred to in sub-paragraph (a) above.

Annex I

INFORMATION TO BE SUBMITTED ON TECHNICAL ASPECTS RELATING TO ENERGY-EFFICIENCY PROJECTS

1. The following paragraphs describe the project information that must be provided for domestic refrigerators and freezers. While similar information on energy performance for air-conditioning equipment needs to be provided (e.g., instead of kWh/year, SEER information needs to be provided for air-conditioning equipment), the methodology followed for the assessment of incentive levels would be similar.

Upon project submission

2. The project submissions should include:

(a) Information on the list of products, the quantity of equipment manufactured (Q) for the previous year and their energy consumption in kWh/year, and the capacity in litres or square metres (sq.m.) and energy-efficiency ratio in the case of air-conditioning equipment;[1] the weighted average energy consumption per litre/(kWh/year/litre or sq.m) would be estimated (BL); this data will be provided by the enterprise for the different units including categories/shipment (i.e., domestic sales or export sales), along with the measurement methodology used for estimating the energy consumption per year;

(b) Information on the MEPS value for each category of the equipment covered under the project – this would include national MEPS and other MEPS used for exported products;[2] it is important to note that products exported without MEPS can only be included if their performance is equal to or greater than the national MEPS;

(c) Information on business-as-usual (BAU) energy performance of the equipment proposed to be covered under the project; this information would follow the same parameters as in subparagraph (a) above;

(d) Information on the target energy consumption in kWh/year and the capacity in litres or sq.m for each category of the equipment proposed to be covered under the project and the additional component costs for achieving those levels for each category of equipment; and the estimated weighted average energy consumption per litre (kWh/year/litre or sq.m), as well as the estimated weighted average energy efficiency ratio (T); and

(e) Information on the methodology used to measure energy consumption based on the corresponding energy measurement standards applicable to the project for the different products leaving the factory (national and other MEPS used for export).

3. The value of T should be better than what the enterprise would achieve under (BAU) scenario.[3] This should be determined when the project is submitted and reviewed and would be based on confirmation

[1] Area in square meters is applicable for display cabinets.
[2] This adjustment would account for differential MEPS levels for domestic and export markets for the same product.
[3] It is known that under a BAU scenario, the energy performance of the equipment would improve due to market and technology factors.

from the government and the enterprise that T is better[4] than the levels that the enterprise would achieve under a BAU scenario.

4. For illustrative purposes, table 1 shows how the data would be presented in the submission.

Table 1. Illustration of data to be presented

Capacity (litre/sq.m)	Quantity manufactured (units)	Baseline energy performance (kWh/yr)	MEPS energy performance (kWh/yr)	Target energy performance (kWh/yr)

5. The weighted average baseline and target kWh/year/litre or sq.m. of the equipment would be estimated based on the quantity of equipment manufactured (Q).

Upon completion of the project

6. The achievement of target energy consumption would be measured based on data from the final project completion report that would provide details on the target (T*) energy consumption in kWh/year/litre or sq.m. based on the energy measurement standards applicable to the project for the different products manufactured in and leaving the factory (national and other MEPS used for export) and the quantities of those products manufactured at the time of completion of the project. The quantities that would be considered would be those quantities manufactured in the year of project completion.

[4] In the case of refrigeration equipment, the lower the targets compared to BAU levels, the higher the energy performance as this is measured in kWh/litre/year; in the case of air-conditioning equipment, the higher the SEER or equivalent compared to BAU levels, the higher the energy performance.

Annex II

CASE EXAMPLE OF COSTS FOR AIR-CONDITIONER MANUFACTURER BASED ON THE PROPOSED MODEL

Air-conditioner manufacturing – a case example

1. A company ABC manufacturing residential air-conditioner with a manufacturing volume of 100,000 units per annum is currently having an average baseline performance level of 3.5 SEER; the MEPS as per the national regulation in the country is 3.5 SEER. The enterprise requests support for achieving energy efficiency target level of 5.7 SEER. For this, the additional capital cost of US $190,000 and additional costs of components in the amount of US $40/unit are agreed after project review.

2. Additional capital cost that would be provided = minimum of (US $250,000 as given in table 1 of the main document above and actual cost requested and agreed (US $190,000)); this value for the project is estimated at US $190,000.

3. The ratio of baseline SEER to MEPS and target SEER to MEPS is 1 (calculated as 3.5/3.5) and 1.63 (5.7/3.5), respectively.

4. Additional component cost that would be considered would be estimated as given in table 1 below.

Table 1. Methodology for calculation of additional component cost

Particulars	Calculation methodology		Value (US $/unit)
Cost after proportionating for performance	34 + (11 * (1.63 -1.5)/(2-1.5))	A (US $/unit)	36.86
R_{cost}	(40/45)	B	0.89
Unit cost		C=AxB (US $/unit)	32.80

Note: Cost for performance is calculated as a proportion of additional cost over and above E-medium based on the target levels of performance (i.e., 5.7 SEER) proposed by this enterprise.
* These are based on costs given in table 1 of the main document; once the incentive is decided, in row A, the proportion of the incentive would be provided.

5. The total funding would be as given below; it must be noted that the component cost related incentive would change based on the Executive Committee decision on that cost item; for explaining the methodology, this example is provided.

Table 2. Summary of total funding for achieving target performance

Particulars	US $	US $/unit
Agreed additional capital costs	190,000	1.90
Agreed additional component cost	3,280,000	32.80
Total	**3,470,000**	**34.70**

6. Assuming a unit charge of 0.9 kg per unit, the total consumption of HFCs in company is 0.9 x 100,000 = 90,000 kgs of HFCs. Based on this quantity, US $/kg of HFCs for this project is US $38.55/kg of which, US $2.11/kg relates to additional capital cost and US $36.44/kg relates to additional component cost. It must be noted that the value given above for additional component cost would decrease if the incentive levels form a proportion of the total additional component cost.

Funding levels for different level of component incentives

7. If we assume that the component incentives for E-medium and E-high agreed are US $11.33/unit and US $15/unit,[1] the estimated additional component cost and total funding for achieving the target performance are given in tables 3 and 4.

Table 3. Methodology for calculation of additional component cost

Particulars	**Calculation methodology**		**Value (US $/unit)**
Cost after proportionating for performance	11.33 + (3.67 * (1.63 -1.5)/(2-1.5))	A (US $/unit)	12.28
R_{cost}	(40/45)	B	0.89
Unit cost		C=AxB (US $/unit)	10.93

Note: Cost for performance is calculated as a proportion of additional cost over and above E-medium based on the target levels of performance (i.e., 5.7 SEER) proposed by this enterprise.
* These are based on costs given in table 1 of the main document; once the incentive is decided, in row A, the proportion of the incentive would be provided.

8. The total funding would be as given below; it must be noted that the component cost related incentive would change based on the Executive Committee decision on that cost item; for explaining the methodology, this example is provided.

Table 4. Summary of total funding for achieving target performance

Particulars	**US $**	**US $/unit**
Agreed additional capital costs	190,000	1.90
Agreed additional component cost	1,093,000	10.93
Total	**1,283,000**	**12.83**

An overview of incremental cost components for conversion from a controlled substance and key differences with additional capital and component costs for energy efficiency

9. For a recently approved project for conversion from HCFC-22 to HFC-32 in air-conditioning manufacturing at similar capacity level, the incremental capital cost and operating costs approved were in the amount of US $671,000 and US $605,340, respectively. The capital cost mainly related to model redesign and costs relating to refrigerant storage and charging facilities, equipment for ultrasonic welding and safety infrastructure including safety audit; these costs are very different from the capital cost that would be needed for energy efficiency improvement in equipment. In light of the above, the proportion of capital cost per kg of HFC consumption reduction to the total cost per kg of HFC consumption reduction is higher for refrigerant conversion projects compared to energy efficiency projects.

10. In case of component costs, the incremental costs mainly relate to redesigned compressor for handling HFC-32 in place of HCFC-22, refrigerant related incremental cost and cost of certain component necessary for using HFC-32 in the equipment; for energy efficiency improvements, the component costs would typically include higher-performance compressors (e.g., invertor compressors), higher-performance heat exchangers (e.g., internally grooved heat exchangers) and controls that can maximise energy efficient cooling by the equipment. In light of the above, the proportion of additional component cost per kg of HFC consumption reduction to the total cost per kg of HFC consumption reduction is lower for refrigerant conversion projects compared to energy efficiency projects.

[1] These component incentive levels are at one-third of the additional component costs.

GLOSSARY

BL	Baseline energy performance for the relevant equipment during submission
C_e*	Standard cost to reach medium/high energy efficiency performance level from MEPS
$C_{e\text{-submitted}}$	Additional component cost submitted
C_{high}	Incentive to reach high energy efficiency performance levels from MEPS
C_{level}	Incentive to reach medium/high energy efficiency performance level
C_{medium}	Incentive to reach medium energy efficiency performance levels from MEPS
$C_{performance}$	Incentive component cost for achieving targets from baseline level
$C_{t\text{-submitted}}$	Additional capital cost submitted
$C_{t\text{-table}}$	Additional capital cost for standard capacities
$Q_{manufactured}$	Quantity of equipment manufactured per annum in baseline year
E-high	High energy efficiency performance level
E-low	Minimum energy efficiency performance level
E-medium	Medium energy efficiency performance level
IEER	Integrated Energy Efficiency Ratio
MEPS	Minimum energy performance standards
R_{cost}	Ratio of $C_{e\text{-submitted}}$ to C_e*
RDC	Refrigerated display (freezer or refrigerator) cabinets
RDC BCs	Refrigerated drink cabinets or beverage coolers
RDC-ICFs	Bottle-coolers", ice cream freezer cabinets
RDC-SCs	Scooping cabinets
RSC	"Visi-coolers", refrigerated storage (freezer or refrigerator) cabinets
RVMs	Refrigerated vending machines
SEER	Seasonal Energy Efficiency Ratio
T	Target energy efficiency performance for the project