Multilateral Fund for the Implementation of the Montreal Protocol

Energy efficiency while phasing down HFCs – key decisions and project submission aspects

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Decision 89/6:

Additional energy efficiency activities in servicing as part of HPMPs for LVC countries

Applicable for LVC countries – two levels of funding depending on HCFC baseline service sector consumption

Part of ongoing HPMP agreements – **agreements to be amended** based on approval of funding

Key activities that can be considered: **demonstration** of energy efficient low-GWP refrigerant based technologies, **training material update**, **certification**, **institutional coordination (MEPS, labelling, testing, standards)** and related **information outreach**

Reports on project progress (actions, performance, funding) as **part of HPMP tranche requests**

Project can be submitted **with the HPMP tranche** or separately **without a tranche**.

Decision 89/6:

Key points to be considered in 89/6 projects

- 53 LVC countries assisted so far
- Looking forward to receiving projects as a part of HPMP to support adoption of low-GWP technologies for the remaining countries
- Institutional coordination strengthening between NOU and energy efficiency authorities – important for sustainable support to implementing energy efficiency
- Coordinating mechanisms with NCAP and other related activities – promoting sustainable cooling
- Maximising complementarity with existing HPMP/KIP and other activities

Decision 91/65:

Pilot projects on energy efficiency

For all countries and projects in the context of HFC phase-down

Country commitments on certain aspects needed for project consideration

Institutional coordination of NOU with energy efficiency authorities ensuring **no duplication** of funds with other projects

Time period for implementation – 36 months from approval

Funding window of **US $20 million**; this funding window is augmentable

Projects to be considered up to the 96th meeting – **extended to the 100th only for servicing**

Decision 91/65
An overview of the types of projects

Includes manufacturing and non-manufacturing activities. In the servicing sector, activities including but not limited to those in decision 89/6

01
Institutional coordination and training / capacity building

02
Development and strengthening MEPS in different applications

03
Demonstration projects for energy efficient low-GWP refrigerant-based equipment

04
Upgrade of existing training programmes, materials and testing centers

05
Investment project – technical support compressor manufacturing using R-290

Decision 91/65
Activities included in projects approved

Strengthening institutional coordination and capacity building (e.g., meetings, training)	7
Development and strengthening MEPS in different applications, labelling, testing programmes and standards for RACHP equipment, including awareness and outreach	15
Demonstration of energy efficient low-GWP refrigerant-based equipment (residential AC, chillers, heat pumps, centralized refrigeration)	10
Upgrade of training programmes and materials /testing centers	8
Investment	1

Further discussions needed on centres of excellence and testing centres

Investment projects are now considered under decision 94/60 and 95/87

An overview of what was submitted under 91/65 projects

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Institutional coordination and related training / capacity building

- Coordination with energy efficiency authorities dealing with RACHP equipment
- Training of relevant stakeholders on implementation of energy efficiency standards in the context of HFC phase down
- Training of customs and enforcement officers on standards implementation

Development and strengthening MEPS in different applications

- Technical assistance for MEPS, labelling and other measures
- Support for monitoring and compliance
- Product database/consumer research on adoption of energy efficient RACHP technologies in different applications

An overview of projects submitted under 89/6 and 91/65

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Upgrade of existing training programmes, training materials and testing centers

- Upgradation of existing energy efficiency testing facilities for RACHP equipment
- Upgradation of training materials for service sector for including energy efficiency

Demonstration projects for energy efficient low-GWP refrigerant-based equipment

- Demonstration of energy efficient low-GWP technologies in different refrigeration and air-conditioning applications
- Linked data collection on performance for outreach and facilitating greater adoption

An overview of projects submitted under 89/6 and 91/65

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Technical support for energy efficiency in different sectors/applications

- Technical support for product development and installation for energy efficient performance
- Technical support for “zero leak” and leak reduction approaches
- Technical support distribution chain to facilitate adoption of energy efficient technologies

Investment project support (available under decision 94/60 and 95/87 from the 94th meeting)

- Design and manufacturing of R-290-based energy efficient compressors for air-conditioning

Distribution of decision91/65 projects - by agencies and region

Agency	Number of projects approved	Total funds approved including support costs (US$)
Germany	4	2,169,413
IBRD	3	567,100
UK	4	593,476
UNDP	12	3,040,674
UNEP	3	396,630
UNIDO	16	3,616,196
Grand Total	42	10,383,489

Region	Number of projects approved	Total funds approved including support costs (US$)
Africa	13	1,879,076
Asia and the Pacific	8	3,126,776
Europe	5	813,150
Global	1	85,600
Latin America and the Caribbean	15	4,478,887
Grand Total	42	10,383,489

Main observations – 91/65 projects

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- Limited number of manufacturing sector projects – these projects would now be considered under decision 94/60 and 95/87
- **Integrated approach with KIP** activities so far limited – recent projects are showing a more integrated approach
- Countries proposing pilots **should have, or prioritize the development of MEPS** – additional information and commitments required
- **Institutional coordination with energy efficiency institutions** at national level addressed – impact needs to be assessed
- Pilot projects demonstrating energy efficient technologies require clear information on: Capital cost (initial investment), energy consumption (existing and replacement system), cost of electricity and investment payback period, replicability and sustainability, and how the project will contribute to energy standards development and strengthening, where applicable

Decision 94/60

Operational framework for energy efficiency

INCLUDES MANUFACTURING ACTIVITIES FOR FIVE PRODUCT CATEGORIES; **DOCUMENT 94/61**

PROVIDES DETAILS OF PROCEDURES IN PROJECT ASSESSMENT

FUNDING WINDOW – **US $100 MILLION**; THIS FUNDING WINDOW IS AUGMENTABLE

INCLUDES COUNTRY COMMITMENTS AND ENTERPRISE COMMITMENTS AMONGST OTHERS; ALSO CHOICE OF TECHNOLOGY IS DEFINED.

COUNTRIES ENCOURAGED TO SHARE INFORMATION ON THE CARBON DIOXIDE-EQUIVALENT EMISSION REDUCTIONS ACHIEVED

TO CONSIDER, AT THE CONCLUSION OF THE **INITIAL PERIOD OF 3 YEARS**, WHETHER AND HOW TO CONTINUE THE INCENTIVE-BASED APPROACH FOR EQUIPMENT MANUFACTURING

Methodology overview – key elements

- Takes into account baseline and target energy efficiency performance of the company

- Takes into account energy standards in the respective country

- Adjusts costs based on industry structure in different countries

- Adjusts incentive based on performance for enhancing energy efficiency and does not incentivise “business-as-usual” scenario

- Recognises importance of implementation timelines

- Notes the need for revision of incentive structure periodically

4 steps used in the incentive methodology

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- **Step 1: Calculation of additional capital costs** – include costs for product design, modification in manufacturing plant, training, certification and product testing

- **Step 2: Calculation of additional component costs** – include costs for compressors, heat exchangers, controls and other components

- **Step 3: Adjustment of additional component costs based on industry structure in the specific country**

- **Step 4: Application of incentive as a portion of the cost adjusted in step 3** – level of incentive to be decided by the Committee

Step 2 - calculation of additional component costs

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RE	RE value	Scenario for the enterprise	Additional component cost in USD
Low	1	If enterprise wants to reach MEPS level	0
Medium	1.5	If enterprise starts from MEPS and wants to reach 50% above MEPS (from 1 to 1.5)	**34** (from discussions with experts)
High	2	If enterprise starts from MEPS and wants to double its performance relative to MEPS (from 1 to 2)	**45** (from discussions with experts)
Between low and medium	1 – 1.5	If enterprise is at MEPS level or slightly above MEPS and wants to reach 50% above MEPS or less – PROPORTIONATE cost for this performance	Less than 34
Between medium and high	1.5 – 2	If enterprise wants to reach above 1.5 but below 2 (twice the MEPS) – PROPORTIONATE cost for this performance	Less than 45
Note: The level of incentive would depend on the baseline of the energy performance of the company and its target energy efficiency performance; example provided here relates to residential air-conditioners			

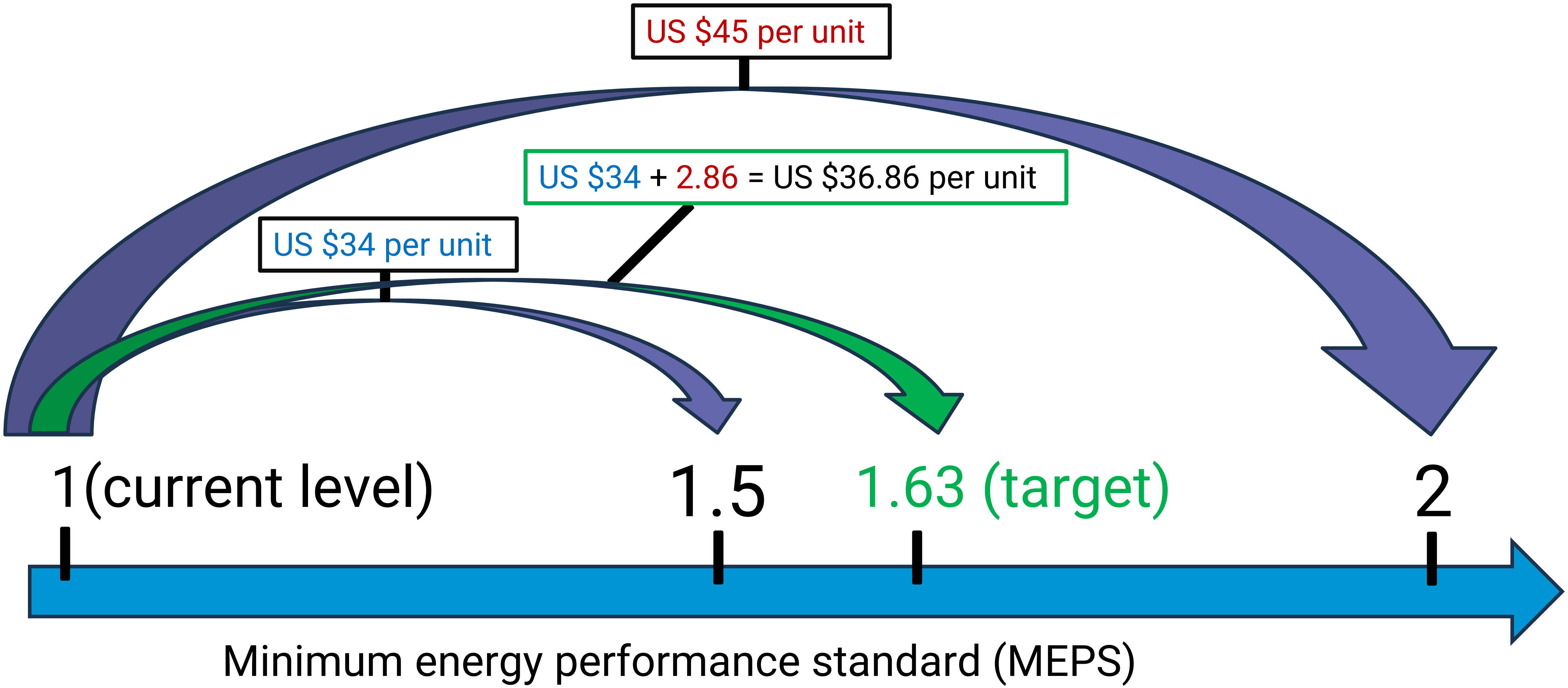
An example of how the model works – case background

- A company "ABC" manufactures residential AC units with a manufacturing volume of 100,000 units per annum

- It is currently having an average baseline performance level of 3.5 SEER and the MEPS in the country is 3.5 SEER. So, the company starts from RE = 1

- The enterprise requests support for achieving energy efficiency target level of 5.7 SEER which means the company aims at achieving a ratio RE = 1.63 (this is 5.7/3.5)

- At the time of project submission, the country through an agency asks for the lump sum of 190,000 USD as additional capital cost and 40 USD per unit as additional components costs



Does not include adjustments for "cost factor" and incentive percentage

Step 4: Calculating the incentive for the company “ABC”

- Additional capital cost = 190,000 USD

- Additional component costs per unit = 36.86 USD / unit

- Additional component costs per unit after adjustment for national circumstances = 32.81 USD / unit

- Incentive level (one third of the cost) = **10.94 USD** (i.e. 32.81/3)

- Total funds provided to “ABC” for the manufacturing of energy efficient equipment at the targeted energy efficiency level = 190,000 USD plus (10.94 USD x 100,000). This amounts to 1,284,000 USD

Step 4: Fund flow

- Additional capital costs – available upfront for the project to beneficiary

- Additional component costs – to be paid in two parts as given below

    - 50 per cent of the component cost incentive upon project completion with **confirmation on achievement of levels of energy efficiency improvement achieved**.
    - Remaining 50 per cent of the component cost incentive 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.

Main aspects to be considered

- Secretariat looks forward to receiving projects with strong linkages between energy efficiency and HFC phase down in applications – strong linkage with KIP is important
- Demonstrate more than “business-as-usual” scenario performance level
- Timely completion of conversion to energy efficient technology - critical
- MEPS implementation and periodic strengthening – important part of project

Decision 95/87

Further elaboration of operational framework for energy efficiency

- Includes manufacturing activities for compressors, heat exchangers and heat-pumps; **document 95/87** provides details of procedures in project assessment
- To note that the operational framework on energy efficiency while phasing down HFCs, at the conclusion of the **initial period of 3 years**, would be reviewed
- Duration of **decision 91/65** extended to 100th meeting – only for servicing activities
- Funding window – **US $40 million for two energy-efficiency end-user projects using a revolving fund mechanism**; the Executive Committee to agree on modalities for implementing the revolving fund
- To provide funding, for the preparation of no more than five projects, of no more than US $100,000 per project for presenting the proposal for revolving fund referred to in **subparagraph f of decision 95/87;** these preparation requests need to be submitted to the 96th meeting
- Includes country commitments and enterprise commitments amongst others
- Requested the Secretariat to do additional work mentioned in **subparagraph e of decision 95/87** and present an updated paper to the 97th meeting

Decision 96/31

Preparation funds for five revolving fund projects

- The Executive Committee approved the following preparatory funds for revolving funds projects:

  - Preparation of a project to create an energy-efficiency revolving fund for end users in **Grenada** in the amount of US $100,000, plus agency support costs of US $7,000, for the **World Bank**;

  - Preparation of a project to create an energy-efficiency revolving fund for end users in **Thailand** in the amount of US $100,000, plus agency support costs of US $7,000, for the **World Bank**, on the condition that stage I of the Kigali HFC implementation plan was submitted no later than the 98th meeting;

  - Preparation of a project to create an energy-efficiency revolving fund for end users in **Türkiye** in the amount of US $100,000, plus agency support costs of US $7,000, for the **World Bank**; and

  - Preparation of a global project to create an energy-efficiency revolving fund for end users in **Colombia**, **Ghana** and **Jordan** in the amount of US $200,000, plus agency support costs of US $14,000, for **UNDP**.

Decision 96/51

Operationalising revolving fund

Part C of document (UNEP/OzL.Pro/ExCom/95/87 and update to annex I in document UNEP/OzL.Pro/ExCom/96/57),

The Executive Committee adopted the framework and modalities for operationalizing the revolving-fund window as set out, with the following understanding and modifications:

- Funding requests for projects should address the illustrative list of information set out in annex II to document *UNEP/OzL.Pro/ExCom/95/87*;
- An advisory board that included in its membership the national ozone unit, along with representatives of key stakeholders, should be established as described in document *(UNEP/OzL.Pro/ExCom/96/57);*
- Funds loaned through the revolving fund should be fully repaid to the MLF by the national financial institutions through the implementing agencies, and
- At the end of the eight-year tenor of the revolving-fund window, the funds would be returned to the Multilateral Fund; and
- The Executive Committee could propose updates to the agreed methodology in the light of experience gained with revolving funds.

Centres of Excellence and energy efficiency Testing centres

Under decision 95/87

To request the Secretariat to prepare, for consideration by the Executive Committee at its 97th meeting, an updated paper that would:

- Elaborate the specific functions for both centres of excellence for sustainable cooling and testing centres for energy efficiency;
- Assess sustainable business models for regional centres;
- Assess potential duplication with activities funded under HCFC phase-out management plans and/or Kigali HFC implementation plans, as well as with existing centres;
- Identify potential opportunities to use existing centres and mechanisms already in place for testing the energy efficiency of equipment;

Outcomes of three half-day sessions

Decision 96/57

- The Executive Committee, decided to request the Secretariat, in consultation with bilateral and implementing agencies, to prepare a paper, for the consideration of the Executive Committee at its 98th meeting, regarding strategic approaches for Article 5 countries relating to:

  - Technical infrastructure, capacities, policy measures, regional cooperation, and data collection and management related to market dynamics and consumption trends in different applications and emerging sectors, related to transitioning to low-global-warming-potential refrigerants and blends, taking into account a holistic approach for sustained HFC phase-down, enhanced energy efficiency and promoting sustainable cooling; and

  - The capacity of end users to adopt sustainable cooling technologies and promote innovation in the refrigeration and air-conditioning service sector, considering digital and artificial-intelligence-assisted tools.

In summary

The operational framework for energy efficiency while phasing down HFCs in the Multilateral Fund is a non-compliance framework which encompasses the following:

SERVICING SECTOR RELATED ACTIVITIES UNDER DECISION 91/65 FOR ALL COUNTRIES

FUNDING WINDOW

MANUFACTURING OF EQUIPMENT FOR ALL COUNTRIES WITH MANUFACTURING SECTOR UNDER DECISION 94/60

FUNDING WINDOW - INCENTIVE BASED APPROACH

MANUFACTURING OF HEAT PUMPS AND COMPONENTS FOR ALL COUNTRIES WITH MANUFACTURING SECTOR UNDER DECISION 85/87

FUNDING WINDOW - INCENTIVE BASED APPROACH

REVOLVING FUND MODALITY AS PILOTS PROJECTS FOR END USERS

FUNDING WINDOW - REVOLVING FUND

SERVICING SECTOR RELATED ACTIVITIES UNDER DECISION 89/6 ONLY FOR LVCS AND IN COMBINATION WITH HPMPS

Thank you

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