

**MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
KIGALI HFC IMPLEMENTATION PLAN PROJECT PREPARATION REQUEST
FORM**

Part I: Project Information

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| Project title: | Kigali HFC implementation plan (KIP) | |
| Country: | Malawi | |
| Lead implementing agency: | UNEP | |
| Cooperating agency: | UNIDO | |
| Implementation period: | December 2021-November 2023 | |
| Funding requested: US \$192,100 | | |
| Agency | Sector | Funding requested (US \$) |
| UNEP | Overarching | 119,000 |
| UNIDO | Overarching | 51,000 |

Part II: Prerequisites for submission

| Item | Yes | No |
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| 1. Official endorsement letter from Government specifying roles of respective agencies (where more than one IA is involved) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Ratification of the Kigali Amendment | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

A. Information required to support PRP funding (Overarching strategy)

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| 1. | 2. Montreal Protocol compliance target to be met in <input checked="" type="checkbox"/> stage I of the Kigali HFC implementation plan | | |
| Phase-down commitment | Freeze and 10 % | Year of commitment | 2024 and 2029 |
| <input checked="" type="checkbox"/> Servicing only | | <input type="checkbox"/> Manufacturing only | <input type="checkbox"/> Servicing and manufacturing |
| 3. | 4. Brief background on previous activities related to the Kigali Amendment and HFC phase-down, as well as HPMP stages (i.e. information on the approval and implementation of ODS alternatives survey; approval and progress in implementation of Enabling Activities project with the expected completion date; HPMP implementation) | | |
| | <p>The Government of Malawi has implemented a number of project activities related to the Kigali Amendment notably ODS alternative survey, Enabling Activities. HPMP is also being implemented.</p> <p>1. The ODS alternative survey: the survey for Malawi was approved at the 74th meeting of the Executive Committee in May 2015 with a total funding of US \$70,000. The Government of Malawi conducted a comprehensive National Survey on consumption of Ozone Depleting Substance (ODS) alternatives in line with Decision XXXVI/9 of the Montreal Protocol on the protection of ozone layer covering the period from 2012 to 2015. The survey achieved its main objective of enabling Malawi to better understand its consumption trends of ODS alternatives. Major ODS alternatives used in the refrigeration and air-conditioning</p> | | |

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| | <p>sector in Malawi include HFCs and their blends, Ammonia, and Hydrocarbons. The survey revealed that HFCs especially R134a is mostly used in several applications while others, R-404A, R410, R407C and R-507A, are coming into the industry. The survey was successfully conducted in the year 2016 and a detailed report was submitted to the Executive Committee.</p> <p>2. Malawi’s Enabling Activities project on early ratification of the Kigali Amendment and HFC phase-down was approved at the 81st meeting of the Executive Committee with a total funding of US \$150,000 plus agency support costs for UNEP. Malawi ratified the Kigali Amendment on 21 November 2017. The project was successfully completed in January 2021 and the report has been submitted to UNEP for onward submission to the Executive Committee for noting. Key achievements are provided under section 3 of this report.</p> <p>3. The HCFC Phase-out Management Plan (HPMP) Stage-I: the project was approved at the 62nd Meeting of the Executive Committee with a total funding of US\$350,000 for the period 2011 to 2020 to reduce consumption of HCFCs by 35% of the baseline. The established baseline consumption of HCFCs for Malawi is 10.8 ODP tonnes. UNEP is the lead implementing agency and UNIDO is the co-operating implementing agency. All five tranches under the HPMP were approved; first tranche at the 62nd meeting, second tranche at 70th meeting, third tranche at 77th meeting, fourth tranche at 81st meeting and fifth and last tranche at the 85th Meeting. Implementation of the HPMP Stage I was completed by May 2021. The Government of Malawi has made tremendous progress on the implementation of activities under stage I of the HPMP. The HPMP Stage-I has successfully enabled Malawi to freeze HCFC baseline in 2013, and achieve 10 percent and over 35 percent reduction in consumption of HCFC by 2015 and 2020 respectively in line with the accelerated HCFC phase-out schedule under the Protocol. The Government of Malawi had been promoting the use of alternative technologies such as natural refrigerants during the implementation of HPMP stage 1.</p> <p>4. The HCFC Phase-out Management Plan (HPMP) Stage II: the project was approved by the 85th Meeting of the Executive Committee in June 2020 with a total funding of US \$726,500 including agency support costs to enable Malawi completely phase-out HCFC consumption by 1 January 2030 in accordance with the Montreal Protocol obligations. Under the HPMP Stage II, UNEP is the lead implementing agency and UNIDO is the co-operating implementing agency. HPMP Stage II is expected to be implemented from 2020-2030. Project activities commenced in June 2021 and will focus on promoting the use of natural refrigerants.</p> |
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| 5. | 6. Current progress in the implementation of Enabling Activities for HFC phase-down project | | |
| Activity | Description | | Implementing agency |
| Assessment of country’s preparedness for HFC phase-down | The Government of Malawi is ready to start the phase-down of HFCs. Malawi ratified the Kigali Amendment in November 2017 and has put in place enabling policies and strategies for quick adoption of low-GWP HFC alternative technologies and the phase-down process of HFCs. Training needs of Refrigeration and Air-conditioning (RAC) technicians and enforcement officers related to HFCs and their alternatives were identified. Barriers to the adoption of low GWP HFC alternative technologies were identified and their mitigation measures / options were included in the policies and strategies developed under the enabling activities project. The general public were thoroughly sensitized on benefits of adopting energy efficient technologies with low GWP. | | UNEP |
| Article 4B licensing & | The ODS regulations are under review to incorporate control measures for HFCs and their blends. The draft revised regulations are | | |

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| Reporting | with the Ministry of Justice and Constitutional Affairs for vetting and have included licensing system for HFCs and are expected to be adopted by January 2022. The implementation of the licensing system will enhance monitoring, enforcement and reporting on HFCs and their products in the country. Malawi has further developed an online registry of all controlled substances under the Montreal Protocol and further includes their alternatives. Enforcement agencies in the country have been sensitized on the operational of the licensing system for HFCs for monitoring purposes. | | |
| Capacity-building & training for alternatives | RAC technicians have been trained on handling and use of low-GWP HFC alternative technologies under the HPMP. Consumer sensitization workshops were conducted and benefits of adopting HFC alternatives were highlighted to enhance their uptake. | | |
| Communication and targeted awareness raising on KA provisions | The NOU in collaboration with the Energy Department has sensitized various key stakeholders on adoption of energy efficient technologies including RAC equipment, building materials etc. Furthermore, policy makers especially Parliamentary Committee on Natural Resources were sensitized on provisions of the Kigali Amendment for them to understand and approve the revised ODS regulations and possibly provide policy guidance on the phase-down process of HFCs. | | |

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| 7. | 8. Overview of an estimated use of ODS alternatives in 2012-2015 (as per data survey of ODS alternative) and their estimated consumption in 2019 data is in MT | | | | | | | | | |
| | Substance | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| | HFC-134a | 129 | 186 | 131 | 148 | | | | 85 | 90.2 |
| | HFC-32 | 0 | 0 | 0 | 0 | | | | 0 | 0 |
| | R-404A | 21 | 37 | 26 | 28 | | | | 8.4 | 8.1 |
| | R-410A | 11 | 12 | 11 | 16 | | | | 6.9 | 7.2 |
| | Sub total | 161 | 235 | 168 | 192 | | | | 100.3 | 105.5 |
| | HC-290 (Propane) | 0 | 0 | 0 | 1 | | | | 2 | 2.5 |
| | HC-600a (Iso-butane) | 1 | 1 | 2 | 3 | | | | 4 | 4.2 |
| | Cyclopentane | 0 | 0 | 0 | 0 | | | | 0 | 0 |
| | Remark: The estimated 2012-2015 use of HFCs and other alternatives is from ODS Alternatives Survey, which was analysed from the inventory of RAC and MAC equipment and their servicing need. The consumption in 2019 and 2020 is obtained from data collection on import statistics of importers. Consumption of HFCs have drastically decreased in 2019 and 2020 due to implementation of HPMP activities which among others promoted adoption of low GWP alternative technologies such as hydrocarbons. | | | | | | | | | |
| 9. | 10. Based on the consumption data given above, please provide a description of the sector/sub-sector that use HFCs in the country, including a short analysis and explanation of the consumption trends (i.e., increasing or decreasing) | | | | | | | | | |
| | Based on the ODS alternative survey, the commonly used HFCs in Malawi include R134a and HFC blend of R-404A and R-410A. HFC-134a is the dominant refrigerant used in the RAC sector. The consumption of HFC-134a is comparatively more than any type of refrigerant over the period 2012 – 2015. For example, consumption of R134a increased from 129 Mt in 2012 to 148 Mt in 2015. HFC-134a is used mainly in domestic refrigeration sub-sector. <ul style="list-style-type: none"> Similarly, the consumption of HFC blends such as R410A and R404A has also increased over the years 2012 to 2015. However, this growth has decreased in 2019 and will continue to decrease as the | | | | | | | | | |

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| | <p>country has embarked on promoting the adoption of high energy efficiency technologies with low GWP. Furthermore, the domestication of the Kigali Amendment has enabled the country to align its policies towards the control of consumption of HFCs and their blends.</p> <ul style="list-style-type: none"> • In the air-conditioning subsector, the dominant HFC blend is R-410A which is likely replacement for HCFC-22 based on current consumption trend. This is followed by R-290. • R-410A and R-404A are the commonly used HFC-blends in the commercial refrigeration. Their consumption increased from 2012 to 2015 and decreased in 2019. The data provided in 2019 and 2020 is based on voluntary submission of data by importers, hence need to get more accurate data under this proposed project. • Consumption of R600a has also increased over the period and is mainly used in domestic refrigeration appliances such as refrigerators and freezers. This refrigerant is taken as a replacement for R134a in the domestic sector. Most of newly imported refrigeration equipment in the domestic sector are using R600a. | | |
| 11. | 12. Description of information that needs to be gathered and updated. | | |
| Information needed | Description | | Agency |
| Updated inventory of HFCs and other ODS alternatives data | To develop and implement an effective Kigali HFC implementation plan (KIP), it is critical to have a credible and accurate data on current consumption of HFCs. It is necessary to update inventory on consumption of HFCs by sector and subsector to fully understand what strategies need to be developed to effectively phase-down HFCs in the country. The ODS Alternative survey provided detailed data and information for the period 2012 to 2015, hence detailed data is required from 2016 to date. The updated information would enable the country to conduct comprehensive analysis to understand the future consumption of HFCs based on current situation and identify actions to curb the growth of HFCs in the future. | | UNEP |
| 13. | 14. Activities to be undertaken for project preparation and funding | | |
| Activity | Cost items | Indicative funding (US \$) | Agency |
| Conduct surveys to determine current consumption of HFCs consumed by different sectors / sub-sectors in the country. The survey will also determine enterprises in the manufacturing and servicing sector will be conducted. | Sensitization and consultation of key stakeholders on a detailed data collection on consumption of HFCs and other alternatives | 14,000 | UNEP |
| | Development of data collection tools, methodology and establish a framework for data collection, analysis and reporting; and undertaking actual country-wide data collection from various key stakeholders. | 10,000 | UNEP |
| | Data analysis on the use of HFCs and other ODS alternatives by refrigerant and by sector and updating of inventory. | 10,000 | UNEP |
| | Review of policies and other legal frameworks in place to ensure compliance to the provisions of the Kigali Amendment. | 5,000 | UNEP |
| | National consultation workshop (or virtual meetings in case of Covid 19 restrictions) for validation of the data and other relevant information on consumption of HFCs and other alternatives including virtual meetings taking into account the existence of the COVID-19 pandemic | 10,000 | UNEP |

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| Development of overarching strategy and project document of Kigali HFC implementation plan | Evaluation on the need to develop Kigali HFC implementation plan (KIP) and identification and prioritization of actions and strategies to be included in the Overarching HFC phase-down strategy to limit growth and/or reduce consumption of HFCs. | 10,000 | UNEP |
| | National consultant for development of strategy, components and action plans for non-investment components | 25,000 | UNEP |
| | International consultant for development of components and action plans on investment component including provisions for strategies on the introduction of Energy Efficiency EE technologies in the market – National consultant facilitating relevant data collection Number of meetings: 5 Number of experts or consultants: 1 national consultant, 1 international consultant | 26,000 | UNIDO |
| | Sector specific meetings and validation workshops for development of strategy, components and action plans on investment component including virtual meetings taking into account the existence of the COVID-19 pandemic Number of meetings: 5 Number of workshops: 1 Number of experts or consultants: 1 national consultant, 1 international consultant | 25,000 | UNIDO |
| | International consultant for guiding the national wide data collection, data analysis and the development of the overarching strategy and project document of KIP | 35,000 | UNEP |
| TOTAL | | 170,000 | |
| TOTAL FOR UNEP | | 119,000 | |
| TOTAL PSC | | 15,470 | |
| TOTAL FOR UNIDO | | 51,000 | |
| TOTAL PSC | | 6,630 | |
| GRAND TOAL | | 192,100 | |
| 15. | 16. How will activities related to the implementation of the HPMP be considered during project preparation for the Kigali HFC implementation plan? | | |
| | The lessons learned from the implementation of HPMP will be considered in the development of the HFC phase-down. The institutional arrangement and other infrastructure established under the HPMP will form the foundation for implementation of the Kigali HFC implementation plan activities. The training of refrigeration technicians and enforcement officers and other activities will be coordinated to ensure smooth and cost-effective implementation of HFC phase-down as well as sustaining of HCFC phase-out. | | |
| 17. | 18. How will the Multilateral Fund gender policy be considered during project preparation? | | |
| | The Government of Malawi is well aware of the Multilateral Fund Gender Policy and the relevant Executive Committee decision 84/92. During the project preparation efforts will be made to ensure that female stakeholders have equal opportunity to participate in the project preparation. Furthermore, when developing individual components of the Kigali HFC implementation plan, gender-disaggregated data will be collected and form part of the strategy. | | |