

United Nations Development Programme
Country: Ukraine
Substantive Revision to the Project Document: Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region



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Resilient nations.*

Project Title:	Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region
UNDP PIMS ID:	4309
UNDAF Outcome:	By 2022, national institutions, private business and communities implement gender-responsive policies and practices to achieve sustainable management of natural resources, preservation of ecosystems, mitigation, adaptation to climate change and generation of green jobs
Expected SP Output:	Outcome 1 – Advance Poverty Eradication in all its forms and dimensions <i>1.1.1 Capacities developed across the whole of government to integrate the 2030 Agenda, the Paris Agreement and other international agreements[1] in development plans and budgets, and to analyse progress towards the SDGs, using innovative and data-driven solutions</i>
Expected CPD Output(s):	Output 3.3. Local authorities develop gender-responsive solutions at subnational levels for the sustainable management of natural resources, ecosystem services, chemicals and waste
Implementing Partner:	United Nations Development Programme
Management Arrangement:	DIM

Substantive Revision Justification

The purpose of this substantive project revision is to support Ukraine meet its compliance obligation for HCFC phase-out by year 2020 under the Montreal Protocol. Substantive revisions are made primarily in response to major changes in the national context caused by military conflict in eastern areas and economic deterioration. The main goal of the project remains the same.

The substantive revision in project document include:

- To support adoption of comprehensive strategy for the Montreal Protocol implementation (Awareness building program for key stakeholders including government authorities, public, and civil society on issues related to the Montreal Protocol implementation and HCFC reduction obligations; and ODS and ODS alternative survey to determine their consumption in Ukraine);
- Including additional activities to ensure use of Analytical Tools for HCFC control enforcement agencies under sub-component Implementation of national level training for Environmental and Customs enforcement authorities. This is expected to reduce illegal import of controlled substances in Ukraine;
- Replacing beneficiary companies for targeted HCFC phase out investment projects by including eligible enterprises in the manufacturing sector. This is expected to reduce demand of HCFCs in manufacturing sector; and
- Demonstration of zero-ODS and low-GWP technology options in the servicing sector.

Substantive revision also envisages extending the project duration till July 2020 to complete activities outlined in the substantive revision.

Programme Period: 2012-2022
Atlas Award ID: 00066300
Project ID: 00082497
PIMS# 4309
Start date: 29 May 2013
End Date 31 July 2020
Management Arrangements: DIM
PAC Meeting Date: 20 December 2012

Total resources required US\$ 13,090,000
Total allocated resources:

- Regular
- Other:
 - GEF US\$ 3 190 000
 - Government US\$ 1350 000
 - Other US\$ 8 550 000

In-kind Contributions US\$ 1 015 000

On behalf of: 
 Signature *Katerina Rybalchenko* Date *27.11.2012* Name/Title *Deputy country Director, a.i.*

LIST OF ABBREVIATIONS

BA	Blowing Agent
CIET	Countries with Economies in Transition
Ex-Com	Executive Committee of the Multilateral Fund for implementation of the Montreal Protocol
GEF	Global Environment Facility
GWP	Global Warming Potential
HC	Hydrocarbons
HCFC	Hydrochlorofluorocarbons
HFC	Hydrofluorocarbons
HFO	Hydrofluoroolefins
ICC	Incremental Capital Cost
IE	Implementing Entities
IOC	Incremental Operating Costs
MENR	Ministry of Ecology and Natural Resources of the Government of Ukraine
MF	Methyl Formate
MFS	Multilateral Funds Secretariat
ML	Methylal
MLF	The Multilateral Fund
MOP	Meeting of Parties
MT	Metric Tonnes
NOO	National Ozone Officer
NOU	National Ozone Unit
ODP	Ozone Depletion Potential
NR	Natural Refrigerants
ODS	Ozone Depleting Substances
RAC	Refrigeration and Air-conditioning
SEI	State Environmental Inspectorate
SFS	State Fiscal Service
TA	Technical Assistance
UNDP	United Nations Development Programme

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1. Situation Analysis

1.1. Background

Hydrochlorofluorocarbons (HCFC) – is a group of ozone-depleting chemicals, which are used as refrigerants, foam blowing agents, solvents, and in aerosol containers, fire extinguishers and other products. In some cases, HCFCs were used as substitutes for chlorofluorocarbons (CFCs) as having lower ozone depletion potential (ODP). HCFCs are controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer (the Montreal Protocol).

The Copenhagen Amendment of the Montreal Protocol of 1992 stipulated that Article 2 countries need to reduce their HCFC consumption to 65% of their baseline in 2004, to 35% of that level in 2010, to 10% by 2015, to 0.5% in 2020 and finally achieve full phase out in 2030. The Beijing Amendment of 1999 extended control measures for HCFCs to production with a freeze in production by 2004 at the baseline. In September 2007, MOP 19 adopted the Montreal Adjustment on Production and Consumption of HCFCs, which entered into force on 14 May 2008. This requires that Article 2 countries accelerate both HCFC consumption and production to 25% of the baseline in 2010.

A number of Countries with Economies In Transition (CEIT) fall under Article 2 of the Montreal Protocol, and are generally eligible for the Global Environment Facility (GEF) funding in support of HCFC phase out, subject to having ratified the Copenhagen amendment, which is the case for the four (4) participating countries: Belarus, Tajikistan, Uzbekistan and Ukraine.

The United Nations Development Programme (UNDP), under the support of the GEF, is implementing the Regional Project "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region (Belarus, Tajikistan, Uzbekistan, and Ukraine)". It is a capacity building effort (with investment elements for the manufacturing, where existing, and servicing sectors) designed to improve regulatory measures to help address the accelerated HCFC phase-out in the medium and longer term, and to strengthen the preparedness for the complete phase-out of HCFCs from current use.

In Ukraine the project has been implemented since 29 May 2013. Due to partial implementation of Investment Programme and Demonstration Project in the region, the decision on restructuring of the project was adopted in October 2015. A two-year extension was also formally approved in December 2015 by UNDP-GEF to complete the vast majority of planned activities by 31 July 2018. In Ukraine, regional activities planned under component-1 were successfully concluded within this extension period. But activities planned under component-2 are only partially complete till date. In view of delayed implementation of national components of the project in Ukraine, Project Board recommended to proceed ahead with substantive revision of the project document in April 2016.

The Project is implemented in close coordination and collaboration with the Ministry of Ecology and Natural Resources of Ukraine (MENR), State Fiscal Service, industries, NGOs, as well as with other related relevant projects in the region through enhanced networking.

The project consists of two overall assistance components and a component on Monitoring and Evaluation (M&E).

- **Component 1 (Regional information exchange and networking component).** The regional component aims to provide, "train the trainers" opportunities related to regulatory enforcement, customs control, expanded licensing and integration of HCFC Phase-out with energy efficiency/Green House Gas (GHG) reduction, training materials for transfer to national level programs, and expanded country exposure.;
- **Component 2 (National capacity building and technical assistance component with investment elements)** targets support for the adoption of comprehensive strategy for the Montreal Protocol implementation (with selected legislative acts to control ODS consumption), capacity building and

supply of analytical tools for HCFC control enforcement agencies (State Fiscal service and State Environmental Inspectorate), and technological conversions in eligible companies in the manufacturing sector (3 in foam sector and 1 in solvent sector). Approx. 70% of the project budget was planned to be invested in these 4 manufacturing enterprises;

- Component 3 covers monitoring and evaluation (M&E) activities.

1.2. Current Situation

Recent years in Ukraine were characterized by key developments that drastically changed the political, economic, and security landscape. Since 2014, military conflict has unfolded in Eastern Ukraine followed by socio-economic crisis of 2014-2015. Pursuant to these developments, governance reform process has also been initiated in past few years.

These developments have impacted HCFC phase-out project in Ukraine resulting in its partial implementation. The planned Investment Component has faced major implementation challenges, as one of the selected companies (Sobranlye) became bankrupt and two other companies, Nord and Intertekhnika, became inaccessible as they were located in non-government controlled area.

The fourth company, Polyfoam, that is a system house, has started conversion to non-ODS technology (water based, methylalend HFCs) using GEF funding. The new non-ODS blowing agent based formulation developed by Polyfoam is expected to be used by various end-users in foam manufacturing and thus reducing HCFC consumption. This project is expected to end successfully by June 2018.

The project also did not have regular government support during the phase of governance reforms. However it has changed in recent past and there is a strong government support for the implementation of all required activities so that country meets its obligations under the Montreal Protocol.

1.3. Need for Substantive Revision

In view of the above challenges, there is a need to make substantive revision in the Project Document to support activities, so that country could meet its compliance targets. New activities will be funded through unutilised funds available in this project and no new funding requirement is expected. However, project is expected to require additional time to complete these activities, hence an extension in the project duration till July 2020 is envisaged.

Project revision envisages the following restructuring of ProDoc:

- To include additional activities related to awareness building and ODS/ODS alternatives survey in Ukraine to support Sub-component: Formal HCFC Phase-out strategy and action plan fully developed and endorsed by the Government'
- Sub-component: 'Investment Programme and Demonstration Project' to include new enterprises for technology conversion as earlier selected enterprises are no longer eligible;
- To strengthen Sub-component 'Capacity Building and Supply of Analytical Tools for HCFC control enforcement agencies' (State Fiscal Service and State Environmental Inspectorate);
- To develop new activities for successful HCFC phase-out in the servicing sector.

1.4. HCFC Consumption in Ukraine

HCFCs are consumed in following end-use categories in Ukraine:

- XPS manufacturing (HCFC-22 and as a mixture with HCFC-142);
- PU foam application (system and blending houses with small-to-medium downstream users dependent on HCFC-141b) and Refrigeration manufacturing (HCFC-141b based polyols) – sub-sector depends on the supply of polyols from local/regional/international system houses;
- Solvents (HCFC-141b); and
- Equipment servicing sector (HCFC-22).

Table 1: Data received from Importers and field surveys of HCFC consumption in Ukraine in year 2014 in key sectors in metric tons

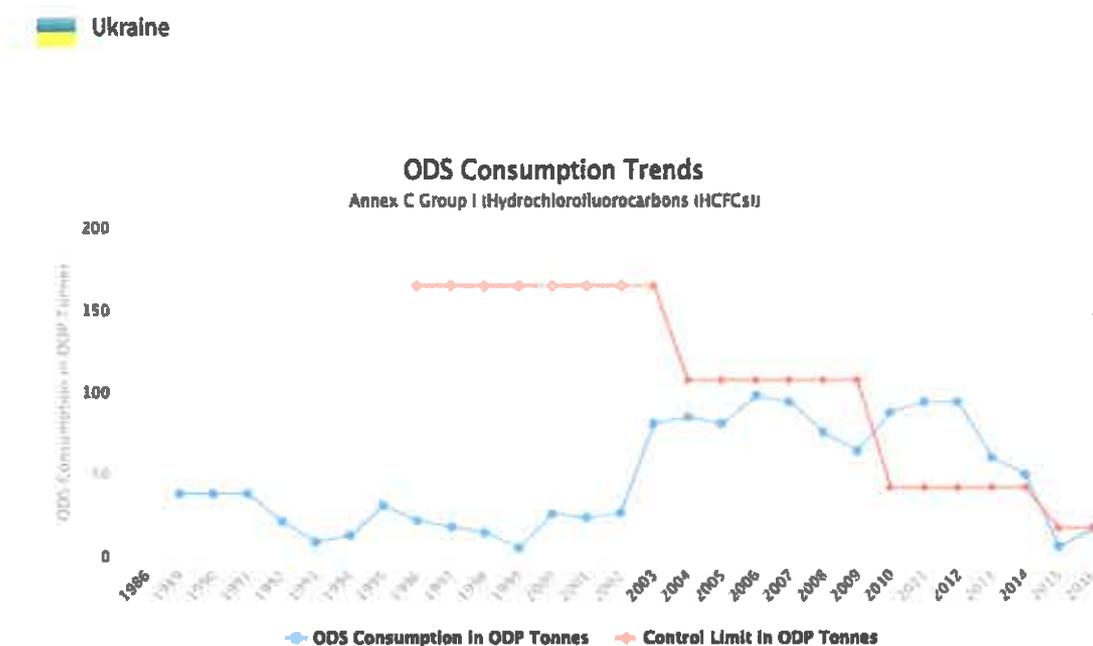
Sector	HCFC consumption (tons)	HCFC consumption (ODP-tons)	Percentage share
XPS	249.80	13.83	27.20
Producers of polyurethane systems/ mixing enterprises	58.50	6.43	12.65
Servicing of refrigeration equipment	532.03	30.60	60.15
Total	840.33	50.86	100

Table 2: Ukraine, Reported HCFC consumption (Ozone Secretariat Records - in metric tons)

HCFC/year	2009	2010	2011	2012	2013	2014	2015	2016
HCFC-21	0	0	0	0	0.04	0	0	0
HCFC-22	712	951	997.45	1500	585.06	557.73	82.52	274.50
HCFC-124	0.14	0	0	0	0	0	0	0
HCFC-141b	102.8	229	207.78	300	202.5	68.50	4.60	9.20
HCFC-142b	201.10	145	12.60	200	76	62.06	0.84	0
HCFC-406A	0	0	0	0	0	119.78	0	0
HCFC-C10M1-A (Blend of R22/R21/R142b)	0	0	0	0	0	31.28	0	0
Total net consumption of ODSs, tons	1015.6	1325	1217.83	2000	863.60	840.33	87.95	283.7
Total net ODP, tons	63.5	86.9	80.4	97.3	53.39	49.06	5.1	16.11

Above table shows the pattern of HCFC consumption in Ukraine by types of substances from year 2010 till year 2016. HCFC-22 contributes to the majority of HCFC consumption in the country.

Table 3: Ukraine, Reported HCFC consumption (Ozone Secretariat Records - in ODP tons)



As per HCFC consumption data submitted to the Ozone Secretariat, country is in line with the HCFC consumption targets. However, it has been noted in the recent years that the availability of HCFC as reported by companies is higher than the consumption data based on imports. It may have happened due to surplus of unused HCFC inventory in the country, which is currently being used by the companies. Another reason could be availability of HCFC in the country through unauthorized imports.

The current UNDP-GEF project envisaged to strengthen both the State Fiscal Service with analytical tools to support appropriate monitoring of HCFCs at their entry points to the country and for future cross-checks of HCFC presence on storage at end-user level to be implemented by the State Environmental Inspectorate. As part of the current project, two chromatograph mass spectrometers and 35 items of advanced refrigerant detecting equipment were delivered to State Fiscal Service (Customs)¹.

Though equipment were made available to the State Fiscal Service of Ukraine (Customs), they are not in use at the moment. Government of Ukraine needs to formally endorse use of the equipment by the appropriate customs department. This endorsement is pending subject to substantive revision in the ProDoc to include all necessary steps for proper use of these equipment. Also, certain auxiliary equipment, consumables, and test samples are not yet available which inhibits the use of these equipment.

Substantive revision envisages procurement of remaining equipment, spares, and consumables; development of a test methodology; development of specialised courses for custom officials to use these equipment; and a study tour to learn about usage in other countries. Such steps will enable custom officials to properly use analytical tools in the identification of potential unauthorised imports, confirmation of approved imports, and in the identification of entities involved in ODS trading.

¹ As per Project Implementation Review 2017

1.5. Stakeholder analysis

The project will be implemented in close coordination and collaboration with relevant government institutions, regional authorities, industries, public and local authorities and NGOs, as well as with other related relevant projects in the region through enhanced networking.

Name of institution, organisation	Description of role and activities
Ministry of Ecology and Natural Resources (MENR)	Control of the ODS substances including product licensing, legislative measures, and main coordination function for the implementation of Montreal Protocol.
State Fiscal Service of Ukraine	Customs clearance of goods imported into (exported from) the country (ODS and ODS-containing products).
State Environmental Inspectorate	Regulatory measures enforcement function: screening of incoming materials identified by Customs for pre-clearance or rejection of import.
Education Institutions	Educational institutions including Custom Training Centre, State Custom Academy which could support in the training process of key stakeholders such as custom officers
HCFC importers	Entities involved in import and trade of controlled ODS in the country
HCFC Users	Entities consuming HCFCs in manufacturing and servicing sectors
Other Stakeholders	Civil society organisations having a role in the Montreal Protocol Implementation including industry associations

2. STRATEGY

Existing ProDoc had 2 key components to assist the country to return to compliance and achieve HCFC phase-out goals.

Component 1: Regional accelerated phase-out capacity building. This component has been successfully implemented. Key outcomes of this component were achieved and no change is planned in the current substantive revision.

Component 2: National Level Capacity Strengthening and HCFC Phase Out Investment. This constitutes the major component of the phase-out project in Ukraine. Key goals identified for this component are:

- Adoption of comprehensive strategy for the Montreal Protocol implementation (with selected legislative acts to control ODS consumption);
- Implementation of national level training for Environmental and Customs enforcement authorities; and
- Targeted HCFC phase out investment projects in eligible enterprises in the manufacturing sector and information exchange on emerging HCFC substitute technologies for ineligible companies.

Revised Project Plan proposes strengthening of Component 2 by:

- To support adoption of comprehensive strategy for the Montreal Protocol implementation (Awareness building program for key stakeholders including government authorities, public, and civil society on issues related to the Montreal Protocol implementation and HCFC reduction obligations; and ODS & ODS alternative survey in Ukraine and development of online system for data sourcing & analysis);
- Including additional activities to ensure use of Analytical Tools for HCFC control enforcement agencies under sub-component Implementation of national level training for Environmental and Customs enforcement authorities. This is expected to reduce illegal import of controlled substances in Ukraine;
- Replacing beneficiary companies for targeted HCFC phase out investment projects by including eligible enterprises in the manufacturing sector. This is expected to reduce demand of HCFCs in manufacturing sector; and
- Demonstration of zero-ODS and low-GWP technology options in the servicing sector.

2.1. Planned changes in Output 2.1

Existing output 2.1	Formal HCFC Phase-out strategy and action plan fully developed and endorsed by the Government
Revised output 2.1	Government of Ukraine adopts and is supported in the implementation of comprehensive strategy for the Montreal Protocol Implementation in Ukraine

Substantive revision aims to support output 2.1- 'Adoption of comprehensive strategy for the Montreal Protocol implementation in Ukraine'. The key changes planned are:

- Awareness building program for key stakeholders including government authorities, public, and civil society on issues related to the Montreal Protocol Implementation; and
- ODS & ODS alternative survey in Ukraine and development of online system for data sourcing & analysis.

Output 2.1.1 Government representatives, academic institutions, and civil society have increased awareness of the issues related to the Montreal Protocol Implementation

Implementation of the planned project activities requires that key stakeholders are engaged actively, to ensure their support for the phase-out. A national enabling programme to support the sustainability of reductions to be achieved will be implemented incorporating education, communication and outreach activities, capacity-building for enforcement and targeted stakeholder, and public awareness activities. In addition, technical assistance and training activities at the enterprise and sector levels will be implemented. Key stakeholders will include government authorities, civil servants, industry, civil society institutions, and educational institutes.

These workshops will be conducted to raise awareness of Ukraine's obligations under the Montreal Protocol arising from the accelerated phase-out schedule for HCFCs, to disseminate and exchange information on alternative technologies, and to have a consensus on project activities to ensure Ukraine's compliance year 2020- HCFC reduction targets. This component will be implemented by supporting select NGOs. These NGOs will be supported to develop course content and to carry out initial education workshops. Further, linkages between energy efficiency and product life cycle management will be leveraged, to ensure that sustainable technology options are implemented.

Output 2c.1.2– HCFC monitoring methodology and system are established and produce regular reports to the Ozone Secretariat and key stakeholders

As per HCFC consumption data submitted to the Ozone Secretariat country is in line with the HCFC consumption targets. However, it has been witnessed in the recent past that availability of HCFC as reported by companies is higher than the consumption data based on imports. It may have happened due to surplus unused HCFC inventory in the country which is currently being used by the companies. Another reason could be availability of HCFC in the country through unauthorized imports.

For successful phase-out of HCFCs in Ukraine its also important to have an accurate understanding of current HCFC consumption in the country and also consumption & availability of various HCFC alternatives. Such a survey will help stakeholders to understand various technology options in the context of the Montreal Protocol and the Kigali Amendment implementation.

This study will be used to develop a basis for national database of HCFCs/HFCs/other ODS alternatives that are imported, used and banked in Ukraine; to estimate current and projected levels of HCFC/HFC use and emissions; and historical and projected use of existing and new ODS alternatives (including low and high GWP alternatives and their sectoral distribution).

It is also proposed to develop an online data collection and analysis system (webservice) in Ukraine. This system will help relevant authorities regularly collect and review data. It will also provide trends in consumption patterns and support authorities take timely and appropriate actions to meet HCFC phase-out targets.

2.2. Planned changes in Output 2.2

Existing output 2.2	Trained working level Environmental and Customs enforcement officials using resources (trainers and training materials) from Component 1 with respect to legislation, regulations, and customs controls
Revised output 2.2	State Fiscal Services and State Environmental Inspectorate have strengthened capacities to control import/export of ODS and equipment containing the same

Existing outcomes/activities:

Under this output key activities included training-of-trainers workshops and equipment supply to support the State Fiscal Service and State Environmental Inspectorate for appropriate monitoring of HCFCs at their entry points in the country.

To ensure that training of new and rotating staff in the State Fiscal Service and State Environmental Inspectorate is sustained in future, it was proposed to equip two training institutions (State Environmental Academy and Customs Training Academy) with training means (office equipment consisting of a laptop, projector and other ancillary tools along with advanced multi-gas identifiers). Additionally, contents of both training course were to be updated to reflect currently available experience with HCFC import controls.

Status and planned changes:

3 groups of 35 custom specialists per group received training in 2015; and one group of 30 specialists received training in 2016. Furthermore, two chromatograph mass spectrometers and 35 portable refrigerant detecting equipment were delivered to the State Fiscal Service ².

Though equipment were made available to State Fiscal Service, these are not in use currently due to pending state project registration. This registration is pending subject to ProDoc substantive revision to include all necessary steps for proper use of these equipment. Also, certain auxiliary equipment, consumables, and test samples are not yet available which prohibit use of equipment.

To ensure that training of new and rotating staff in State Fiscal Service and State Environmental Inspectorate is sustained in future, it is proposed to support two training institutions (State Environmental Academy and Customs Training Academy) to develop specialised course on the Montreal Protocol implementation and use of portable refrigerant detecting equipment.

Additional activities are proposed to ensure equipment are used by the relevant authorities, including:

- Development of an appropriate methodology/Standard Operating Procedures for using chromatograph mass spectrometers and portable refrigerant detecting equipment;
- Purchase of additional distillation column for spectrometer, consumables and spare parts;
- Purchase of pure HCFCs gas samples for testing and calibrations;
- Development of specialized training courses to train custom officials on the Montreal Protocol implementation and use of portable refrigerant detecting equipment;
- Training of lab technicians and study tour to enhance capabilities for using these equipment.

² As per Project Implementation Review 2017

2.3. Planned changes In Output 2.3

Existing output 2.3	Targeted Phase-Out Investment and Demonstration Projects
Revised output 2.3	Select enterprises in the manufacturing sector implement zero-ODS and low-GWP technologies in their production process

Existing outcomes/activities:

A principal component of the phase-out project is the investment programme in the manufacturing sector. It included:

- Implementation of blending operation conversion to methyl formate technology at Polyfoam System House (POLYFOAM LTD);
 - Project proposal was later revised to include Methylal, water and HFC365 (Solcane) as substitutes for HCFC141b. This project is in advance stages of implementation and final handover protocol is expected in June 2019.
- Implementation of a PU foam conversion to c-pentane technology at Intertehnika (PSC “Intertekhnika”);
 - This sub-component was cancelled as company is in non-government controlled area and has stopped operations due to military conflict.
- Implementation of an XPS foam conversion to CO2 technology at Sobraniye (LTD “Sobranie-PRO-UG”);
 - This sub-component was cancelled as company has gone bankrupt due to financial difficulties faced in its business operations.
- Implementation of solvent phase-out to trans-blends at Nord (Nord Group Holding).
 - This sub-component was cancelled as company is in non-government controlled area and has stopped operations due to military conflict.

Planned Changes:

Due to the external circumstances that went beyond the project’s scope, there have been significant challenges in the implementation of the above mentioned activities. Substantive revision envisages replacement of beneficiary organisations for technology conversion to non-ODS alternatives and addition of demonstration projects in the servicing sector.

Implementation of blending operation conversion to non-ODS/very low GWP alternative (water/HCOs/HFOs) at Private Company Khimpostachalnyk (“Khimpostachalnyk”)

PC KHIMPOSTACHALNIK produces PU polyols and PU Polyol Systems to produce rigid foams that, along with imported isocyanates, are sold into the market as A (polyol) and B (isocyanate) to be reacted by the end users into PU product such as panels and spray foams. HCFC-141b is used, beside water, as blowing agent.

The system house established in 1997 has 100% Ukrainian ownership and serves approximately 49 small-to-medium scale enterprises using the Khimpostachalnyk produced polyurethane (PU) systems. The foam manufacturing that takes place downstream of the system house involves panels, refrigerator cabinets, pour-in-place and spray foam operations.

Since the majority of downstream users are small, the project is designed to target the system house, which acts as an implementing partner of the project with technical assistance provided to the downstream users on the appropriate and safe application of the new replacement chemical.

Under this project, Khimpostachalkyik will phase out the use of HCFC-141b—a significant ozone depleting as well as a global warming substance—and replace this with water/HCOs/HFOs. The expected phase-out of HCFC-141b currently used in preparing polyol formulations is 24 MT ODS, while the total manufacture of polyol systems is 330 MT at current baseline (2017).The consumption of HCFC-141b in metric tons has evolved as follows (in metric tons):

2014	2015	2016	2017
68.50	37.50	16.20	14.90

The proposed replacement technologies will be water/methyl formate or water/methylal. Both methyl formate (MF) and methylal (ML) are oxygenated hydrocarbons (HCOs) They work like hydrocarbons but are less flammable and non-explosive. To avoid any flammability some HFOs might be co-added. However, the company can, within the budget constraints, use any other non-ODS / low GWP technology.

The overall cost estimate for the proposed sub-component is presented in the summary table below and the project document is attached in Annexure.

	GEF	Co-Financing	Total
Implementation of blending operation conversion to non-ODS/very low GWP alternative (water/HCOs/HFOs) at Khimpostachalnyk	498 000 USD	100 000 USD	598 000 USD

GEF finance will cover technology replacement costs (capital) up to thresholds recommended by MLF cost-effectiveness policies, as well as technical assistance for the implementation of the project.

National co-finance will address local engineering works to prepare the enterprise for the new technology: new facility and operational expenses, civil works, operation permitting, system optimization works for various PU applications. It will invest in regular training of personnel in equipment use and safety procedures; monitoring of equipment performance and maintenance/repairs as required, PR campaigns on the use of ozone- and climate friendly technology in products after the conversion.

Implementation of a PU foam conversion to water/HCOs/HFOs (non-ODS/very low GWP blowing agent) at PCF Advance LLC (“Advance”)

PCF ADVANCE LLC (“Advance”) produces PU systems for the production of rigid foams HCFC-141b is used as auxiliary blowing agent. Under this project Advance will phase out the use of HCFC-141b—a significant ozone depleting as well as a global warming substance—and replace this with water/HCOs/HFOs.

The system house established in year 1991 is 100% Ukrainian owned and serves approximately 25 small-to-medium scale enterprises. Advance’s chemical supplier is BASF Polyurethanes GmbH, Germany, for which it acts as a distributor. The polyols delivered by BASF are locally, in Advance’s facility, blended with HCFC-141b purchased from China and then delivered to the ~25 customers/end users. The end-users of Advance’s products consume typically from 0.1 tons/year to 1 t/a and mostly manufacture rigid foam for pouring and spraying applications.

The table below summarizes the annual HCFC-141b consumption at Advance.

2014	2015	2016	2017
16.50	18.20	19.00	18.00

The project has been designed for the enterprise to replace the current use of HCFC-141b with water/HCOs/HFOs technology with very low GWP characteristics.

The overall cost estimate for the proposed sub-component is presented in the summary table below.

	GEF	Co-Financing	Total
Implementation of a PU foam conversion to water/HCOs/HFOs (non-ODS/very low GWP blowing agent) at "PCF Advance"	498 000 USD	100 000 USD	598 000 USD

GEF finance will cover technology replacement costs (capital) up to thresholds recommended by MLF cost-effectiveness policies, as well as technical assistance for the implementation of the project.

Co-finance will address local engineering works to prepare the enterprise for the new technology: new facility and operational expenses, civil works, operation permitting, system optimization works for various PU applications. It will invest in regular training of personnel in equipment use and safety procedures; monitoring of equipment performance and maintenance/repairs as required, and PR campaigns on the use of ozone and climate friendly technology in products after the conversion.

2.4. Addition of new Output 2.4

Output 2.4	Demonstration of zero-ODS and low-GWP technology options for HCFC phase-out in the servicing sector
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More than 60% of HCFC consumption in Ukraine is for servicing of existing equipment. Majority of servicing requirements come from commercial refrigeration appliances and domestic air conditioners. The revised ProDoc proposes development of demonstration projects for HCFC phase-out in the servicing sector.

The project proposes demonstration of non-ODS and low-GHG HCFC alternatives in commercial refrigeration appliances. The project will also aim for increase in energy efficiency to ensure twin benefit of ODS reduction and climate change mitigation. This demonstration project is expected to help servicing sector assess and demonstrate use of non-ODS and low-GHG options and help build technical capabilities to retrofit/modernise other existing HCFC based equipment.

The project will provide funding support for purchase of new equipment, retrofitting, training of technicians, and supply of equipment to technicians. The selected recipients will finance technology design, local engineering works, installation and maintenance, while the project will provide new equipment operating on alternative technologies (or equipment required for retrofitting) through grant mechanism.

Training program for service technicians will be conducted along with development of training manuals. This will demonstrate new approaches to wider community of technicians and demonstrate proper installation/use and maintenance of such equipment and technologies in support of improved maintenance practices and standards.

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3. PROJECT RESULT FRAMEWORK

<p>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:</p> <p>Output 3.3. Local authorities develop gender-responsive solutions at subnational levels for the sustainable management of natural resources, ecosystem services, chemicals and waste</p>
<p>Country Programme Outcome Indicators:</p> <p>Output 3.3. Local authorities develop gender-responsive solutions at subnational levels for the sustainable management of natural resources, ecosystem services, chemicals and waste</p>
<p>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one):</p> <p>Government adopts policy frameworks and mechanisms to ensure reversal of environmental degradation; climate change mitigation and adaptation; and prevention of and response to natural and human-caused disasters.</p>
<p>Applicable GEF Strategic Objective and Program:</p> <p>Objectives: To protect human health and the environment by assisting countries to phase out consumption and production and prevent releases of ODS according to their commitments to Montreal Protocol phase-out schedules, while enabling low-GHG (Greenhouse Gas) alternative technologies and practices.</p>
<p>Program: For the period of GEF-4, the GEF will assist eligible countries in meeting their HCFC phase-out obligations under the Montreal Protocol, and strengthening capacities and institutions in those countries that still are faced with difficulties in meeting their reporting obligations.</p>
<p>Applicable GEF Expected Outcomes:</p> <p>(1) HCFCs are phased-out according to Montreal Protocol schedule, or faster, in GEF-eligible countries</p> <p>(2) GEF-eligible countries meet their reporting obligations under the Montreal Protocol</p>
<p>Applicable GEF Outcome Indicators:</p> <p>(1) Indicators for Outcome 1: (a) ODP adjusted tons of HCFCs phased-out from consumption (GEF-4 replenishment target: HCFCs: 50-70 ODP tons) (b) Percentage reduction in HCFC consumption in the participating countries</p> <p>(2) Indicators for Outcome 2: (a) Percentage of GEF-funded countries that meet their reporting obligations under the Montreal Protocol</p>

Indicators	Baseline (2017)	Targets (2020)	Sources of verification	Assumptions
Outcome 1. Ukraine complies with the accelerated Montreal Protocol HCFC phase-out requirements through stabilization and progressive reduction of HCFC consumption.				
1. HCFC consumption in Ukraine	164.2 ODP metric tons	0.821 ODP metric tons (0.5% of baseline)	Article-7 and Country Program Report submitted to the Ozone Secretariat	Successful implementation of comprehensive strategy for the Montreal Protocol implementation (with selected legislative acts to control ODS consumption); Accurate monitoring and reporting.
Output 2.1.1: Government representatives, academic institutions, and civil society have increased awareness of the issues related to the Montreal Protocol implementation.				
1. Number of government representatives who have an increased awareness on the issues related to the Montreal Protocol implementation	0	50	Verification of training records	Successful collaboration with NGOs to implement such activities.
2. Number of civil society representatives and other relevant stakeholders who have an increased awareness on the issues related to the Montreal Protocol implementation	0	150		
Output 2.1.2: HCFC monitoring methodology and system are established and produce regular reports to the Ozone Secretariat and key stakeholders				
1. ODS and ODS alternative survey in Ukraine is available	No	Yes	Survey report	Internationally approved methodology is adopted for this survey; National consultant has access to all required sources of data for detailed survey.
2. Online system for data sourcing & analysis is available	No	Yes	Launch report of online data registry (webservice)	
Output 2.2: Strengthening the capacity of specialists of the State Fiscal Services and State Environmental Inspectorate to control import/export of ODS and equipment containing the same.				
1. Extent to which analytical instruments are used to detect ODS by specialists of the State Fiscal Services and State Environmental Inspectorate [Scale 0-2: 0 – not used, 1 – partially, 2 – fully]	1. 0 (not used)	1. 2 (fully used)	Certified test methodology document, formal handover confirmation, confirmation from relevant authorities of regular usage of instruments	Test methodology is approved by relevant government authorities and all necessary equipment, spares and consumables are available for lab testing.

Indicators	Baseline (2017)	Target (2020)	Sources of verification	Assumptions
Output 2.3: Implementation of zero-ODS and low-GWP technology conversion projects in select enterprises in the manufacturing sector.				
1. HCFC usage in production process of Khimpostachalinyk (system house) and its downstream users	14.90 metric tons HCFC consumption	0 metric tons HCFC consumption	Periodic progress reports; Handover protocol document confirming the completion of technology conversion project.	UNDP requires regular reporting and conducts monitoring of equipment use; Supplied equipment is adequately maintained and used by company.
2. HCFC usage in production process of PCF Advance LLC	18.00 metric tons HCFC consumption	0 metric tons HCFC consumption	Periodic progress reports; Handover protocol document confirming the completion of technology conversion project.	UNDP requires regular reporting and conducts monitoring of equipment use; Supplied equipment is adequately maintained and used by company.
Output 2.4: Demonstration of zero-ODS and low-GWP technology options for HCFC phase-out in the servicing sector.				
1. Number of successfully implemented zero-HCFC demonstration projects	0	5	Demonstration projects completion reports; Technicians training records.	UNDP requires regular reporting and conducts monitoring of equipment use; Supplied equipment is adequately maintained and used by the entities.
2. Number of people who built skills on the implementation of zero-HCFC technologies through demonstration projects	0	TBD		

4. TOTAL PROJECT BUDGET

Award ID:	00066300	Award ID:	00066300
Award Title:	Ukraine: Initial Implementation of Accelerated HCFC Phase Out in the CEIT Regional		
Business Unit:	UKR10		
PIMS no.	4309		
Implementing Partner (Executing Agency)	UNDP Ukraine		
Award ID:	00066300		

GEF Outcome/ Atlas Activity	Responsible Party	Fund ID	Donor Name	Total (USD)
OUTCOME 2: NATIONAL LEVEL CAPACITY STRENGTHENING AND HCFC PHASE OUT INVESTMENT	UNDP	62000	GEF	2 860 000
<i>OUTCOME 3: Monitoring, learning, adaptive feedback, outreach and evaluation</i>	UNDP	62000	GEF	40 000
OUTCOME 4: Project Management Budget	UNDP	62000	GEF	290 000
Total Project Cost with Project Management Costs	UNDP	62000	GEF	3 190 000

5. Workplan Implementation Schedule

	2013	2014	2015	2016	2017	2018	2019	2020
Output 2.1.1: Government representatives, academic institutions, and civil society have increased awareness of the issues related to the Montreal Protocol implementation.								
Awareness building program for key stakeholders on issues related to the Montreal Protocol	Local consultants							
	Training Workshops							
	Awareness Campaigns							
Output 2.1.2: HCFC monitoring methodology and system are established and produce regular reports to the Ozone Secretariat and key stakeholders								
HCFC and HCFC alternative survey in Ukraine	Local Consultants							
	International Consultants							
	Training Workshops							
Output 2.2: Strengthening the capacity of specialists of the State Fiscal Services and State Environmental Inspectorate to control import/export of ODS and equipment containing the same.								
	Test Methodology Development							
	Purchase of Auxiliary equipment, consumables and spare							
	Purchase of pure HCFC samples for tests							
	Development of training curricula							
	Technician training and study tours							
Output 2.3: Implementation of zero-ODS and low-GWP technology conversion projects in select enterprises in the manufacturing sector.								
Implementation of a PU foam conversion project at Polyfoam	International Consultant (TA)							
	Formulation Development (TA)							
	Equipment & Consumable							

6. MANAGEMENT ARRANGEMENTS

The Management Arrangements under this project revision will remain the same as under the original Project Document.

7. LEGAL CONTEXT

The Legal Terms and Conditions under this project revision, as applied to all UNDP technical assistance projects, will remain the same as under the original Project Document.

