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UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT DOCUMENT

MALAYSIA

Project title: HCFC Phase-out Management Plan (HPMP) Stage-II for compliance with post 2015 control targets for Annex-C, Group-I substances		
Country: Malaysia	**Implementing Partner:** Department of Environment, Ministry of Natural Resources and Environment (MNRE)	**Management Arrangements :** National Implémentation Modality (NIM)
Country Programme Outcome: As Malaysia does not have a United Nations Development Assistance Framework, UNDP's framework is based on activities that directly supports the achievement of national priorities as laid out in the 11th Malaysia Plan and in line with the *national transformation policy, government transformation programme*, *economic transformation programme*, *rural transformation programme*, and *political transformation programme*. Expected County Programme outcome- Priority 2 on Sustainable and Resilient Development: Implementation of a national development agenda that enables green growth through climate-resilient measures, sustainable management of energy and natural resources, and improved risk governance.		
UNDP Strategic Plan Output: **Output 1.4** Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented		
UNDP Social and Environmental Screening Category: Low	**UNDP Gender Marker:** 1	
Atlas Project ID/Award ID number: **00098730**	**Atlas Output ID/Project ID number: 00101950**	
Planned start date: 31 July 2017	**Planned end date:** 31 December 2021	
LPAC date: 6 June 2017		

Brief project description:

Malaysia's HCFC Phase-out Management Plan (HPMP Stage-II) comprises of a combination of interventions such as technology transfer investments, policies and regulations, technical assistance, training, awareness and communications and management, coordination and monitoring in various HCFC consuming sectors, to be implemented from 2017 to 2021. This plan builds on activities completed in HPMP Stage-I.

Expected Outcome: Upon successful completion, the plan will result in net sustainable reductions of minimum 146.24 ODP tonnes (2,049.54 MT) in the national HCFC consumption by 1 January 2022, contributing to Malaysia's compliance with the post 2015 control targets for HCFCs.

FINANCING PLAN	
Montreal Protocol	USD 6,138,063
Cost-Sharing (Cash)	N/A
Government (In-kind)	USD 300,000
TOTAL RESOURCES	**USD 6,438,063**

SIGNATURES		
Signature: DATO' NIK AZMAN NIK ABDUL MAJID (Print name) **Director General, Economic Planning Unit**	**Agreed by Government**	**Date/Month/Year:** 29/9/2017
Signature: (Print name) **Director General, Department of Environment**	**Agreed by Implementing Partner**	**Date/Month/Year:** 02/10/2017
Signature: (Print name) Stefan Priesner **Resident Representative, UNDP**	**Agreed by UNDP**	**Date/Month/Year:** 02/10/2017

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ACRONYMS AND ABBREVIATION

APR	Annual Progress Report
AWP	Annual Work Plan
AP systems	Approved Permit System
AC	Air-conditioning
ATC	Authorised Training Centres
CTC	Carbon tetrachloride
CE	Cost effectiveness
CDR	Combined Delivery Report
CFC	Chlorofluorocarbon
CPAP	Country Programme Action Plan
DOE	Department of Environment
EPU	Economic Planning Unit
GWP	Global warming potential
HCFC	Hydrochlorofluorocarbon
HPMP	HCFC Phase-out Management Plan
IOCs	Incremental Operating Costs
ICCs	Incremental Capital Costs
iPIC	Informal Prior informed consent
MNRE	Ministry of Natural Resources and Environment
MITI	Ministry of International Trade and Industry
MLF	Multilateral Fund for the Implementation of the Montreal Protocol
MP	Montreal Protocol
MOP	Meeting of the Parties
NOU	National Ozone Unit
NSE	National Steering Committee
NIM	National Implementation Modality
NFP	National Focal Point
NPD	National Project Director
ODS	Ozone Depleting Substances
ODP	Ozone Depleting Potential
OPU	Ozone Protection Unit
OAI	Office of Audit and Investigations
PU	Polyurethane
PSE	Project Steering Committee
PMU	Project Management Unit
RAC	Refrigeration and Air-conditioning
SMEs	Small and Medium Enterprises
TA	Technical Assistance
TWG	Technical Working Group
UNDP	United Nations Development Program

I. SITUATION ANALYSIS

1. Background

Malaysia is an upper-middle income country with a population of approximately 31.7 million (2016) and an area of approximately 330,803 km^2.

As a country that is subjected to monsoon seasons, it is vulnerable to the changes in rainfall variability and intensity and in weather patterns. In recent years, Malaysia has been especially prone to increased climate hazards such as urban flooding and droughts. Malaysia has also been experiencing the adverse effects of climate change which include impacts on water resources, agriculture, forest resources, coastal and marine areas, energy and public health.

Malaysia has been an active player in the International Environmental Agreement and acceded to the Vienna Convention and ratified the Montreal Protocol on Substances that Deplete the Ozone Layer in August 1989. Table 1-1 shows the dates of ratification by Malaysia of the Protocol and its amendments:

Table I-1: Dates of ratification of Montreal Protocol and its Amendments

Agreement	Ratification
Vienna Convention	29 August 1989
Montreal Protocol	29 August 1989
London Amendment	16 June 1993
Copenhagen Amendment	05 August 1993
Montreal Amendment	26 October 2001
Beijing Amendment	26 October 2001

Source: Ozone Secretariat

Malaysia is classified as a party operating under Paragraph-1, Article-5 of the Montreal Protocol and thus qualified for technical and financial assistance, including technology transfer, through the financial mechanism of the Montreal Protocol.

Malaysia's Country Programme incorporating the National Strategy and Action Plan for controlling the use of Ozone Depleting Substances was approved in 1992. Since then, Malaysia has taken proactive measures such as phase-out activities including technology transfer investments, technical assistance, training and capacity-building, information dissemination and awareness-raising and development and implementation of regulations. Malaysia has established a comprehensive regulatory framework for controlling ozone depleting substances (ODS). As a result, Malaysia has consistently been in compliance with the provisions of the Montreal Protocol. Hydrochlorofluorocarbons (HCFCs) are classified as controlled substances under Annex-C Group-I of the Montreal Protocol and are subject to the adjusted control schedule for Article-5 countries.

1.1 HPMP Stage-I of Malaysia

Malaysia implemented HPMP Stage-I during 2012-2016 and has largely completed HPMP Stage-I activities that contributed to a consumption reduction of 111.85 ODP tonnes of HCFCs. These activities helped the country achieve their HCFC consumption reduction target in year 2015. The main achievements of HPMP Stage-I of Malaysia are:

Legal framework:

- The licensing and quota system for HCFC import was established by the Department of Environment (DOE) and was enhanced in 2014 by adding the licensing of HCFC re-exports.

- Three hundred thirty-one (331) customs officers were trained with 60 to 80 to continue to receive training annually and 15 refrigerant identifiers were purchased and distributed.

Foam manufacturing sector:

- Thirteen (13) Poly Urethane (PU) foam manufacturers included in HPMP stage I had completed their conversions to cyclopentane, resulting in the phase-out of 860 MT (94.6 ODP tonnes) of HCFC-141b. Through the technical assistance (TA) programme four local systems houses had customized at least one low-GWP formulation and shared their experiences with downstream clients.

Refrigeration servicing sector:

- A total of 8,430 technicians have been trained to date. In addition, 82 trainers were certified as Master Trainers; a training manual for technicians in the refrigeration and air-conditioning (RAC) sector was developed and distributed; the technicians' certification programme was updated and a mandatory online certification programme for technicians using controlled refrigerants launched during the Ozone Day celebration on 29 September 2016; 30 recovery units and service tools were procured and distributed to 30 selected Authorised Training Centres (ATC); and six mini-reclaim units for reclaim centres are in the process of being procured with delivery expected by the end of 2017.
- The pilot project to replace 78 small-size HCFC-22 based air-conditioning (AC) units by HFC-32 based units has been completed at two demonstration sites (University Kuala Lumpur and the Environmental Institute of Malaysia).

Project implementation and monitoring unit

- The management, co-ordination and monitoring of the activities planned under the HPMP is undertaken with the overall supervision of the National Ozone Unit (NOU).

As of May 2017, of the USD 9,587,470 approved under the HPMP Stage-I, USD 8,273,945 has been disbursed (Table 1-2).

Table I-2: Financial report of stage I of the HPMP for Malaysia (in USD)

Tranche	Approved	Disbursed	Disbursement Rate (per cent)
First Tranche	5,000,000	5,000,000	100
Second Tranche	3,628,723	3,273,945	90
Third Tranche	817,452	0	0
Fourth Tranche	141,295	0	0
Total	**9,587,470**	**8,273,945**	**86**

As part of the implementation plan for the fourth tranche of the HPMP Stage-I, the following activities will be implemented:

- Finalisation of refrigerant management regulations by the Attorney General's office (USD 81,295);
- A training session for approximately 40 customs officers on the use of refrigerant identifiers, agreements with HCFC exporting countries and informal prior informed consent (iPIC) system, labelling standards and practices, HC codes, harmonization of databases of refrigerants and blends, nomenclature of refrigerants and categories of refrigeration and air-conditioning equipment;

- Training workshops on good refrigeration practices for approximately 400 technicians; 10 refrigerant identifier units will be procured and provided to DOE training centres and selected ATCs; the signing of a Memorandum of Understanding between the 6 reclaim centres and DOE, and delivery of mini-reclaim units to the centres;
- Activities in refrigeration management, including the completion of the ongoing pilot incentive programme to introduce CO2-based systems in the industrial and commercial refrigeration sector;
- Completion of the CO_2 demonstration project; and
- Co-ordination and management of the HPMP.

1.2 HCFC Survey in Malaysia for HPMP Stage-II

Taken into account the complexities associated with technology choices of conversion in RAC and foam sectors and the need for addressing Small and Medium Enterprises (SMEs) under the HPMP Stage-II, detailed stakeholder consultations were held during 2014 and 2015 with the relevant ministries and industries. Through a national consultant team, field survey on HCFC consumption was undertaken in 2015 and early 2016. The data collected was analysed, and an overall approach for post 2015 targets was developed. This was discussed with various stakeholders for their inputs and suggestions in May 2016.

2. HCFC Supply Scenario

2.1 Production, import, export and distribution

There is no production of HCFCs in Malaysia. The entire domestic demand is met through imports mainly from China, India, Republic of Korea, Singapore and USA. Small amount of HCFCs are also re-exported by the country. Import and export of HCFCs are regulated in Malaysia through a licensing and permit system. HCFC-141b, HCFC-22 and HCFC-123 are the main HCFCs imported. HCFC-22 and HCFC-123 are consumed in manufacturing and servicing of RAC equipment, whereas HCFC-141b is used primarily as blowing agent in foam sector.

HCFCs are sold by the importers to manufacturers or users directly or indirectly through secondary distributors or retailers. HCFCs are also supplied through service establishments and contractors. Larger manufacturers also import HCFCs directly through the licensing and permit system.

2.2 Historical HCFC Consumption (2011-2015)

The HCFC consumption in Malaysia in 2009 was 7,700 MT. As of 2015, the consumption of HCFCs was 6,571 MT.

Over the period up to 2015, consumption of HCFCs has largely decreased except for a small growth in HCFC-123. It must be noted that this growth in HCFC-123 has minimum impact on national HCFC consumption targets in the country. The consumption of HCFC-22 and HCFC-141b has seen a declining trend. The main reasons for this decline are:

- National regulations and consumption control measures implemented by the National Ozone Unit (NOU) for HCFCs to achieve compliance with HCFC consumption targets;
- Phase-out projects that have been implemented in foam sector for phasing-out HCFC-141b consumption; and
- Inflow of imported HCFC free RAC equipment that contributed to reduced dependence on HCFC-based equipment in the country.

It must also be noted that HFC consumption levels would have increased in the last 3-4 years in Malaysia. This is mainly because of increase in manufacturing and demand of HFC using equipment in RAC sector. Table 1-3 shows the consumption of HCFCs in Malaysia over the last 5 years.

Table I-3: HCFC consumption in Malaysia (2011-2015 Article 7 data)

HCFC	2011	2012	2013	2014	2015	Baseline
Metric tonnes (MT)						
HCFC-22	6,167.26	7,635.02	5,355.20	5,913.75	5,425.18	6,355.19
HCFC-21	0.00	0.00	0.00	0.00	0.00	18.60
HCFC-121	0.17	0.00	0.00	0.00	0.00	0.00
HCFC-123	33.70	64.29	14.95	72.93	65.48	56.65
HCFC-141	80.0	0.00	0.00	0.00	0.00	13.38
HCFC-141b	1,242.06	2,869.16	1,321.08	1,239.97	1,079.04	1,477.61
HCFC-142b	1.80	0.00	86.74	4.47	0.00	12.10
HCFC-225	1.08	1.18	0.58	0.00	1.52	1.11
Total (MT)	**7,526.07**	**10,569.65**	**6,778.55**	**7,231.12**	**6,571.22**	**7,934.74**
ODP tonnes						
HCFC-22	339.20	419.93	294.54	325.26	298.38	349.54
HCFC-21	0.00	0.00	0.00	0.00	0.00	0.74
HCFC-121	0.01	0.00	0.00	0.00	0.00	0.00
HCFC-123	0.67	1.29	0.30	1.46	1.31	1.13
HCFC-141	5.60	0.00	0.00	0.00	0.00	0.94
HCFC-141b	136.63	315.61	145.32	136.40	118.69	162.54
HCFC-142b	0.12	0.00	5.64	0.29	0.00	0.79
HCFC-225	0.08	0.08	0.04	0.00	0.11	0.08
Total (ODP tonnes)	**482.30**	**736.90**	**445.83**	**463.40**	**418.50**	**515.76**

Source: A7 data report

3. Sectors using HCFCs

Historically, Malaysia has had a robust industrial and manufacturing base in various sectors from petrochemicals to consumer goods. The main HCFC consuming sectors also are largely consistent with this trend and have a diverse manufacturing base in Malaysia. The consumption of HCFCs in Malaysia has been seen in the following sectors/sub-sectors and application areas:

- Air-conditioning sector (both manufacturing and servicing)
- Refrigeration sector (both manufacturing and servicing)
- Foam sector
- Fire-fighting sector
- Solvents sector

3.1 Air Conditioning Sector

3.1.1 Manufacturing

Among the enterprises active under the AC sector only two companies are wholly Malaysian owned. All the enterprises engage in the sector have their operations in the State of Selangor and only one located in the State of Negri Sembilan. There are no manufacturers in both the States of Sabah and Sarawak.

Various types of air-conditioners are produced in Malaysia and these include units for residential, commercial and industrial applications. Products include air-cooled split units, air and water-cooled packaged units, DX and flooded chillers and heat pumps.

Based on the survey response, and estimates of HCFC consumption for 2015, the estimated total annual production by the 12 manufacturers was about 1.2 million units. The total production in the country not only caters the demand of domestic market, but also serves the overseas which include USA and Australia. The residential air-conditioners accounts for about 90 per cent of total production.

HCFC-22 and HCFC-123 are the two types of HCFCs used in the AC sector of Malaysia. Of all manufacturers, only one company is using HCFC-123 for large capacity installations. Consumption of HCFCs for the last two years is shown in the table below.

Table I-4: HCFC consumption for Year 2013-2015

HCFC Type	Consumption (MT)			Consumption in ODP tonne (2015)
	2013	2014	2015	
HCFC-22	1,399.9	1,200.60	1,056.30	58.10
HCFC-123	39.0	53.00	34.60	0.69

3.1.2 Imports

The imports of air conditioning equipment in Malaysia is mainly of air-cooled split and packaged units, of which split room air-conditioners up to 2.5 HP rating constitute the bulk of the imports. There are about twenty importers, of which about ten are large-sized. In 2015, about 358,000units were estimated to be imported to Malaysia, mainly from China, Japan and US, predominantly HCFC-22 based. The imported air-conditioners are fully or partially charged with refrigerants. During installation of these split air-conditioners, additional top-up charge is needed and this is estimated to be 229 MT in the year 2015.

3.1.3 Exports

Malaysia is a significant export hub for air conditioning equipment in the region, particularly for air-cooled split and packaged air-conditioners. Between 60-70 per cent of the production is exported. Estimated total exports in 2015 are between 717,000-836,000 units and these primarily include air-cooled split and packaged units.

3.1.4 Servicing

The estimated population of HCFC-based equipment in the air conditioning sector in 2015 was about 8 million units and HCFC-22 and HCFC-123 were the main substances used for servicing in this sector. The estimated HCFC consumption in servicing in this sector in 2015 was about 4,000 metric tonnes. Due to the steady economic development, market penetration of air conditioning equipment would continue to grow in Malaysia and thus consumption in AC sector is expected to grow in the next two to three years.

3.2 Refrigeration Sector

The application of HCFCs in the refrigeration sector has been observed in commercial and industrial applications. The refrigeration sector performs a critical function of serving the cold chain in Malaysia. Due to expanding market for food service equipment, the quality and sophistication of the manufacturing technology has gradually improved over the years. The sector also experiences competition from imported products and equipment, testifying to the significant market potential.

3.2.1 Manufacturing

The commercial refrigeration sub-sector comprises of vending machines, visi-coolers, bottle coolers, water-coolers, chest freezers, etc. used in restaurants and other food service establishments. The Cold Chain refrigeration sub-sector comprises of supermarket refrigeration equipment (such as display cabinets, island freezers, walk-in coolers and freezers), cold storages and warehouses. R-404A and R-507 are mainly used in low-temperature applications. Ammonia is used in some applications and HCFC-22 is used in medium temperature applications.

In the refrigeration sector, there are 16 enterprises engaged in manufacturing of commercial refrigeration equipment. Of the 16 enterprises in the sector, 9 use HCFC-22 as refrigerant (with an average 2013-2015 consumption of 5.4 MT) and HCFC-141b as a foam blowing agent (with an average 2013-2015 consumption of 45.37 MT).

It must be noted here that HFC based technologies are popular in Malaysia in refrigeration sector (e.g., HFC-134a, R-404A). These enterprises consume both HCFCs and HFCs depending upon the customer needs.

3.2.2 Imports and exports

Import-export of HCFC based refrigeration equipment from Malaysia is negligible.

3.2.3 Servicing

While in the past, the servicing demand for HCFC-22 was growing due the rapidly increasing population of commercial refrigeration equipment, the growth is expected to decrease in future. This is mainly because of the increase in HFC consumption in commercial refrigeration equipment and possibly, other lower GWP refrigerant based equipment. The estimated HCFC consumption in servicing is about 50 MT.

3.3 Foam Sector

3.3.1 Polyurethane Foam

Polyurethane foams for various applications are manufactured in Malaysia. The sector has experienced steady growth in recent years primarily driven by the economic development and increase in purchasing power of the population, and growth in the construction and cold chain industry.

HCFC-141b is still the predominant blowing agent used in foam applications. It is used either as pure HCFC-141b or pre-blended in polyols supplied by the polyurethane chemical suppliers. There is no local production of HCFC-141b and therefore the entire requirement is met through imports by chemical suppliers, systems houses or sometimes directly by the foam manufacturers. HCFC-141b as a part of pre-blended polyols are also exported to neighbouring countries such as Vietnam. Of total import of 1,079.04 MT (118.69 ODP tonnes) of HCFC-141b in 2015, 712.47 MT (78.37 ODP tonnes) was consumed in the PU foam sector and 8.5 MT (0.94 ODP tonnes) in the solvent sector. The rest 358 MT (39.4 ODP tonnes) contained in pre-blended polyol was exported to Vietnam.

There are seven systems houses in the country, namely, BASF, Colorex, Cosmo, Dow, Maskimi, PPT and Oriken, which have facilities for blending and customization of HCFC-141b polyols in Malaysia.

Polyurethane foam processing equipment is not manufactured locally. There are four main polyurethane foam processing equipment suppliers in Malaysia and these are- Cannon, OMS, RIM Polymers and SAIP. Other global suppliers are represented through their respective corporate representations. Consumption of the HCFC-141b over the period 2013 to 2015 for different foam applications is shown in Table 1-5.

Table I-5: HCFC-141b Consumption by applications (2013-2015)

Foam Group (no. of enterprises)	Chemical Consumption (Blowing Agent: HCFC-141b) (MT)			Percentage Change (2013 – 2015)
	2013	2014	2015	
Roofing (11)	189.27	235.70	261.55	38.2
Panel & Insulated Pipe (42)	265.48	300.19	323.68	21.9
Commercial Freezer & Chiller (16)	39.92	43.68	51.68	29.5
Ice Box (and others) (8)	61.15	65.60	75.56	23.6
Total Consumption (77)	**555.82**	**645.17**	**712.47**	**28.2**

As evident from the table above, there is an increase in consumption of HCFC-141b for all applications between 2013 and 2015. Overall, consumption for the sector has gone up by about 28.2 per cent with the largest share by the roofing group (38.2 per cent).

The distribution of HCFC-141b use among PU foam enterprises is presented in Table 1-6.

Table I-6: Distribution of HCFC-141b use among PU foam enterprises (2015)

Size of Enterprise (MT/year)	No. of Enterprises Identified	Total Consumption (MT)	Total Consumption (ODP Tonne)
Below 1	12	4.43	0.487
1 - < 5	29	80.88	8.896
5 - < 20	25	230.21	25.323
=>20	11	396.96	43.666
Total	**77**	**712.47**	**78.37**

Large enterprises (capacity 20 MT or more per year) consumed about 56 per cent of the total HCFC-141b usage by the industry (equivalent to about 44 ODP tonnes). Small enterprises (capacity < 5 MT per year) consumed less than 10 ODP tonnes.

Various methods are applied for foam dispensing. Manual methods are still used not only by small and medium scale enterprises but also by larger ones. Both high-pressure (58 per cent) and low pressure machines (42 per cent) are used.

3.4 XPS Foam

There is no consumption of HCFCs in XPS foam sector as there are no companies in operations in this sector.

3.5 Fire-fighting Sector

In HPMP Stage-I, it was observed that HCFC-123 was used in portable fire extinguishers and total flooding systems. It was also noted that there was only one manufacturer of HCFC-123 based fire extinguishing systems and the manufacturer consumed about 13 MT of HCFC-123 in 2009.

Survey and consultations held with industry players in fire-fighting sector during the preparation of the HPMP Stage-II noted that use of HCFC by the industry is limited or very minimal as all or almost all of the industry players have transitioned to use of HFCs and powder forms of fire suppressants.

3.6 Solvents Sector

HCFC-based solvents are used in general and precision cleaning, drying and defluxing applications and in electronics cleaning such as audio and video-heads, reflector glasses for laser printers and lenses, which require optimal surface cleanliness. During Stage-I, it was observed that about 0.67 metric tons of HCFC-225 has been reported in the Solvents Sector in 2009.

Based on information provided by one enterprise, it has been established that HCFC-141b is used as a cleaning agent mainly for the electronic, aeronautical, automotive and glass making sectors. For the single enterprise, consumption of HCFC-141b for 2015 was about 8.5 MT (0.94 ODP tonnes). In addition, 1.52 MT (0.11 ODP tonnes) of HCFC-225 were consumed as a cleaning solvent in 2015.

4. HCFC consumption by sector and substance (2015)

Table 1-7 below shows the 2015 HCFC consumption in Malaysia by substance and sector:

Table I-7: Distribution of HCFCs by sector and substance in Malaysia (2015)

Description	HCFC type	Sector	MT	MT (per cent)	ODP tonnes	ODP tonnes (per cent)
Manufacturing	HCFC-22	RAC	1,072.73	16.3	59.00	14.1
	HCFC-141b	PU foam	1,070.54	16.3	117.76	28.1
	HCFC-141b	Solvents	8.50	0.1	0.94	0.2
	HCFC-225	Solvents	1.52	0.0	0.11	0.0
	HCFC-123	RAC	30.78	0.5	0.62	0.1
Servicing	HCFC-22	RAC	4,352.55	66.2	239.39	57.2
	HCFC-123		34.60	0.5	0.69	0.2
Total			**6,571.22**	**100**	**418.50**	**100**

HCFC-22 and HCFC-141b are the main HCFCs used in the country. HCFC-141b is consumed mainly in the PU foam manufacturing, while HCFC-22 is consumed in the RAC manufacturing and servicing sectors. A small quantity of HFC-123 is consumed to manufacture and service chillers. Approximately 10 MT (HCFC-141b [8.50 MT] and HCFC-225 [1.52 MT]) are consumed in the solvent sector.

5. Institutional Arrangement

Malaysia established the Ozone Protection Unit (OPU) within the Department of Environment (DOE) to respond to the mandates of the Montreal Protocol. The Ozone Protection Unit within the Air Division of the Department of Environment, plays a lead role in the Government's sustained efforts to phase-out ODS in the country and act as National Ozone Unit (NOU).

A Project Steering Committee (PSE) is convened by the DOE, and serves as the project's coordination and decision-making body. The NOU acts as the Secretariat to the PSC.

The NOU is also the Secretariat to the National Steering Committee (NSC) for the Protection of Ozone Layer that serves as an advisory body to the Government to provide strategic and policy guidance for implementation of the Montreal Protocol. The Chair of the NSC is the Secretary General of the Ministry of Natural Resources and Environment (MNRE). There are various working groups for the implementation of Montreal Protocol in Malaysia and the OPU acts as their coordinating body.

The OPU is partially supported through the Institutional Strengthening Project with financial assistance from the Multilateral Fund and implemented by UNDP.

A Project Management Unit (PMU) was established under HPMP Stage-I. This unit supports the NOU in operationally managing HPMP project activities and reports to the OPU. PMU has only operational project management responsibilities and does not have regulatory powers which remain with the Government.

5.1 Existing Policies and Regulations

Malaysia has taken a proactive approach in phasing out controlled substances under the Montreal Protocol. It has formulated policies and legislations to restrict and limit the use of these controlled substances. These policies and strategies have provisions for the monitoring of the importation and consumption of controlled substances as well as for promoting the use of non-ODS substitutes and alternatives in existing industries and new investments.

Malaysia's environmental policy regime can be traced to as early as 1974 with introduction of the Environmental Quality Act, 1974. Amendments to the Act had been made to include provisions on the prohibition of the use of CFCs in the refrigeration, foam and fire-fighting sectors. The guidelines for the control measures for the protection of the ozone layer to facilitate the implementation of the phase-out programme were issued by the Department of Environment in 1994.

To provide regulatory and policy support for enabling the industry to eliminate ODS in line with the country's obligations under the Montreal Protocol, the Government of Malaysia has taken and continues to take the following key initiatives and actions:

- Environmental Quality (Prohibition on the Use of CFCs and Other Gases as Propellants and Blowing Agents) Order, 1993;
- Environmental Quality (Refrigerant Management) Regulations, 1999;
- Environmental Quality (Halon Management) Regulations,1999;
- Environmental Quality (Delegation of Powers) (Halon Management) Order, 2000;
- Hydrogen Cyanide (Fumigation) Act (1953), (revised 1981);
- Occupational Safety and Health Act (1974); and
- Plant Quarantine Act (1976).

The above regulations provide for powers to control the import, installation, use and/or disposal of CFCs and other ODSs which are prohibited under the Montreal Protocol.

One of the primary systems of controls on ODS is the Approved Permit System (AP System), which was initially administered by the Ministry of International Trade and Industry (MITI). However, since 2013, the AP System has been administered by the Department of Environment.

Since its introduction in 1994 under the Prohibition of Import (Amendment No. 4) Order, 1994 of the Customs Act, 1967, all importers of the listed ODS, namely CFC-11, CFC-12, CFC-13, CFC-113, CFC-114, CFC-115, carbon tetrachloride (CTC) and 1,1,1-trichloroethane (TCA) must obtain an import permit issued by MITI. The total quantity of any of these substances that can be imported by the licensed importers in any year is set by a committee. The amount is reduced each year in line with the Montreal Protocol obligations.

Besides the above, the Government has also undertaken various educational and public awareness programmes on the need to protect the ozone layer. Various guidelines and documents have also been produced for industry and public information and include:

- Guidelines for prequalifying and selection criteria for acceptable alternatives of ODS (1995):

- Training Manual for mobile air conditioning and recycling/service workshop operators (2003);
- Operation Manual and Safety Guide for RSS Technicians (2007);
- Guidebook on non-ODS technology (1997);
- Training Manual for Technicians in Refrigeration and Air-conditioning sector (2014).

Other initiatives implemented by the Government included the provision of incentives to investment in ozone friendly technologies by approving several fiscal measures such as duty exemptions on imports on non-ODS technology, duty exemption on imports of HFC-134a and also include:

- Promoting the decentralization of implementation and enforcement of policies and regulations by interacting with and strengthening local environment focal points
- Supporting public awareness initiatives and campaigns for promoting ozone layer protection at the consumer level.
- Regular interaction with other ministries and departments, industry representatives and implementing agencies for information dissemination related to impact of policy measures
- Actively participating in international meetings to represent Malaysia's interests
- Promoting research and use of ozone-friendly technologies
- Providing incentives and rewards for development and use of ozone-friendly technologies

Over the last 4 years, the Government has implemented policies and regulations to control and monitor HPMPs. The Department of Environment established AP system which enabled the Government to control and monitor importation and consumption of HCFCs, this was further enhanced in 2014 with the licensing of re-export of HCFC.

The monitoring system of ODS imports and exports is functioning well. Malaysia has achieved their compliance targets for consumption for 2013 and 2014. The Government would continue to strengthen the regulations for phasing-out HCFCs based on the overall strategy and HCFC phase-out approach.

The Government has recently launched an e-based system of identification of technicians who have been trained and have received a certificate. This system will help in customers knowing whether the technicians servicing their equipment are qualified and would promote adoption of good service practices.

6. Development Challenges

Availability of suitable alternatives and technologies:

Under the HPMP stage-II, the focus is more on long term environmental and occupational sustainability while selecting alternative substances and technologies. Thus, the selection of alternative substance whether used as a refrigerant, blowing agent or fire suppressant, are governed by the factors such as-favourable physical and chemical properties for the concerned application, being inert and stable, compatible with existing materials, preferably not flammable and toxic, with zero ODP and low GWP and easily available.

In addition, the technology selection is governed by the factors such as-proven and reasonably mature technology, end-product properties and performance should be maintained, cost-effective conversion with minimal disruption of current manufacturing operations, compliance with established local and international standards for health safety and environment, low overall direct and indirect CO2-equivalent emissions and implementable in a relatively short time frame.

Currently, alternative substances and technologies that fully meet the above requirements are not available, except for one or two applications. Due to the environmental and occupational impact of technologies in the ODS consuming sectors, the past two decades have been marked by constant uncertainties and changes as well as several technological innovations and investments to overcome them.

As more scientific and technical information on alternative technologies and their environmental impacts, as well as information on research on new alternatives becomes available, the eventual choice of alternative technology will need to carefully consider environmental impacts and focus more on long-term environmental and occupational sustainability. This will need resources to be directed towards innovative products and processes that minimize ozone and climate impacts, while remaining efficient and affordable.

HPMP Stage-I implementation provides a lot of insight into technology options and timing associated with the technology choices. Given that HPMP Stage-II will involve phasing-out HCFCs in a large number of SMEs in foam, refrigeration and air-conditioning applications, the technology choices should be cost-effectiveness, easily available and in addition, the implementation capability of the enterprises along with time required for implementation need to be taken into account.

Thus, cost effectiveness, and availability of technologies are the factors that are currently unfavourable to wider adoption of substitute technologies. This constitutes a major challenge for reducing demands for HCFCs and thereby compliance with the HPMP Stage II targets.

Stringent timeline for implementation:

The earliest date by which actual field activities of HPMP stage-II can commence, is by May 2017. This is to allow time for putting in place the necessary project initiation procedures, agreements etc. This means that stringent timelines are likely to be encountered for implementing actions for Stage-II compliance. In addition, the number of foam manufacturers eligible for funding will be doubled compared to that in Stage-I. This will make the management and coordination of activities very challenging. Adequate resources will be allocated, to support the additional costs of management, coordination and monitoring.

It is considered extremely important to engage and enlist the support of all stakeholders in the implementation of the HPMP (Stage-II). To accomplish this, targeted awareness and capacity-building activities will be carried out. Accordingly, resources will be allocated to cover the costs of awareness and capacity-building actions.

II. STRATEGY

7. Guiding Principles

The overarching strategy underlying the HCFC Phase-out Management Plan (HPMP) for Malaysia is based on the following guiding principles:

- Reflect national context and priorities;
- Develop and demonstrate a strengthened and proactive partnership between government and industry;
- Draw upon the lessons learnt from the functioning of institutional arrangements and operational mechanisms, integrate and build upon existing infrastructures and introduce new mechanisms as needed; and
- Be dynamic and evolving, and to be open for revisions and adaptation as necessary in response to evolving situations.

8. Objectives

The objectives of the overarching strategy of Malaysia's HCFC Phase-out Management Plan Stage-II are as below:

- To facilitate Malaysia's compliance with the control targets for HCFC consumption with minimal impacts on the national economy, on environment and occupational health; and
- To implement a combination of interventions such as technology transfer investments, policies and regulations, technical assistance, training and capacity-building, awareness and education and monitoring and management in the selected HCFC consuming sectors, contributing to achieve sustainable reductions and phase-out of HCFC consumption.

The activities relating to HPMP Stage-II will build on activities that have been and are under implementation in HPMP Stage-I.

9. Elements of strategy

The main elements of the strategy for Stage-II are:

- Achieve compliance with 2020 targets with priority to HCFC-141b phase-out in foam applications;
- Early phase-out of RAC manufacturing to avoid population of HCFC based equipment – link to the existing amended regulations on refrigerant management relating to prohibition of manufacture, import and assembly of 2.5HP and below of air-conditioning units for use In Malaysia;
- Promote and adopt low-GWP substances, as much as possible keeping in view industry acceptability, safety to industry and consumers and long term sustainability;
- Prohibit manufacture, assembly and import of all products and equipment using HCFCs except essential use to the extent feasible at the earliest instance possible; and
- Provide support to service sector primarily to equip infrastructure for training institutions.

10. Starting point and phase-out achieved

Table 2-1 below presents Malaysia's achievement under HPMP Stage-I and the remaining eligible consumption for phase-out project activities post Stage-I.

Table II-1: Remaining eligible consumption after HPMP Stage-I (ODP tonnes)

Substance	Annex	Group	Starting point	Stage I targets	Remaining consumption
HCFC-123	C	I	1.13	0.0	1.13
HCFC-141	C	I	0.94	0.0	0.94
HCFC-141b	C	I	162.54	94.6	67.94
HCFC-142b	C	I	0.79	0.0	0.79
HCFC-21	C	I	0.74	0.0	0.74
HCFC-22	C	I	349.54	17.25	332.29
HCFC-225	C	I	0.08	0.0	0.08
Total			515.76	111.85	403.91

Source: HPMP Stage-I updated Agreement approved at 75th ExCom Meeting

The HPMP Stage-I prioritized the foam sector and the project activities under investment component were successfully completed in the sector. Only some activities relating to service sector and promotion of projects for adoption of low GWP technologies in the country are still under implementation.

As evident from the table above, about 22 per cent reduction from starting point was proposed to be achieved through the measures adopted in HPMP Stage-I. It is observed that HPMP Stage-I translates to achievement of about 15 per cent reduction compared to starting point by 2015.

11. Plan of action under HPMP Stage-II

The components to be implemented during HPMP Stage-II include- regulatory actions; conversion of the remaining PU foam manufacturing enterprises; Technical assistance (TA) to RAC manufacturing enterprises to completely phase-out the use of HCFC-22; a workshop to provide TA to enterprises in the solvent sector; activities in the servicing sectors; and implementation and monitoring (Table 2-2).

Table II-2: Components of HPMP Stage-II of Malaysia

Sector	Components of HPMP Stage-II	Targeted Substance	Impact in ODP tonnes		Funds approved (USD)
			Eligible	Actual	
Polyurethane foam sector	Conversion of PU foam manufacturing sector: Enterprises with consumption above 5 MT per year will be addressed first during period 2017-2018 and those with lesser than 5 MT per year would be addressed from 2019 to 2021. Technology options: Pre-blended hydrocarbons (HC), HC and HFO	HCFC-141b	66.94	78.37	3,976,563
Solvent sector	Stage II does not include the phase out of HCFCs in the solvent sector since there are limited alternatives that are cost-effective, safe and low-GWP. Instead, only TA to the sector for a workshop on ODS-free alternatives will be provided. Technology options: HFE, PCE and other HC based solvents	HCFC-141b	NA	NA	12,500
Refrigeration and air-conditioning sector	Refrigeration manufacturing sector: TA for enterprises in manufacturing of refrigeration equipment on conversion of HCFC-22 to low GWP based alternative technology. Technology options: Low GWP options (e.g. R-600a, carbon dioxide, ammonia, and low-GWP blends, should those become available and feasible in a safe manner)	HCFC-22	0.29	0.29	100,000
	Air-conditioning manufacturing sector: TA for enterprises in manufacturing of air-conditioning equipment on	HCFC-22	58.79	58.79	

Sector	Components of HPMP Stage-II	Targeted Substance	Impact in ODP tonnes		Funds approved (USD)
			Eligible	Actual	
	conversion of HCFC-22 to low GWP based alternative technology. Technology options: Low GWP options promoted (e.g. HFC-32, HC-290 and low-GWP blends, should those become available and feasible in a safe manner)				
	RAC servicing sector: Capacity building and training focusing on minimizing HCFC-22 consumption through good practices and efficient/safe servicing of equipment using low GWP flammable alternatives.	HCFC-22	17.75	17.75	1,549,000
	Project Management and Coordination		n/a	n/a	500,000
	Total				**6,138,063**

The above action plan would result in phase-out of 66.94 ODP tonnes of HCFC-141b and 76.83 ODP tonnes of HCFC-22 for a total of 143.77 ODP tonnes.

Regulatory actions:

To implement the above measures, the following key policy and regulatory interventions will be implemented:

- A ban on export of HCFC-141b contained in pre-blended polyols by 31 December 2018 and a ban on the import and use of HCFC-141b contained in pre-blended polyols by 1 January 2022;
- Phase-out all uses of HCFC-141b except in the solvent sector by 1 January 2022;
- Limit consumption of HCFC-141b to 1 ODP tonne or less for use in the solvent sector by 1 January 2022;
- A ban on import of refrigeration and air-conditioning (RAC) equipment operated with HCFCs and a ban on manufacturing and new installations of RAC equipment operating with HCFCs by 1 January 2020; and
- No longer issue licenses for the import of HCFC-141, HCFC-142b, and HCFC-21. (Malaysia has not seen import of HCFC-141, HCFC-142b and HCFC-21 in recent past and hence it is decided not to issue licenses for these substances). This intervention will result in the additional phase-out of 0.94 ODP tonnes of HCFC-141, 0.79 ODP tonnes of HCFC-141b and 0.74 ODP tonnes of HCFC-21 from Malaysia's total consumption)

Thus, HPMP Stage II will result in total phase-out of 146.24 ODP tonnes of HCFCs.

12. Strategy components and their cost break-up

Polyurethane foam sector plan

The HCFC phase-out strategy in the polyurethane foam sector will comprise of the following components:

- Seventy-seven enterprises will be converted to low-GWP alternatives, including pre-blended hydrocarbons (HC), HC and HFO, with a total phase-out of 78.37 ODP tonnes of HCFC-141b. Of the 77 enterprises, 67 are eligible (with a consumption of 70.99 ODP tonnes), one is non-Article 5-owned (0.18 ODP tonnes), and nine were established after the 21 September 2007 cut-off date (7.2 ODP tonnes).

  Considering that 1 ODP tonne of HCFC-141b will be phased out in the solvent sector in later stages of the HPMP, and that the remaining eligible funding of HCFC-141b after Stage I of HPMP is 67.94 ODP tonnes, funding is requested for only 66.94 ODP tonnes. The remaining 4.05 ODP tonnes of HCFC-141b consumption eligible for funding and the 7.38 ODP tonnes of consumption ineligible for funding would be phased out without funding from the Multilateral Fund. Therefore, off the 67.94 ODP tonnes remaining eligible for funding after Stage I of HPMP, 66.94 ODP tonnes would not be deducted from Malaysia's remaining consumption, leaving 1 ODP tonnes of remaining HCFC-141b tonnage eligible for funding to cover the solvent sector in future stage of HPMP.

  A staged approach will be used with enterprises with consumption above 5 MT converted during 2017-2018, and the remaining smaller enterprises from 2019 to 2021, in anticipation of the further optimization and introduction of low-cost, low-GWP alternatives developed during Stage I.

- Technical support to the sector for information dissemination on emerging low-GWP alternatives.

The costs of testing, trials and training for enterprises are estimated based on their total HCFC consumption. Consumption less than 500 kg would be USD 1,300; USD 3,000 for enterprises with consumption between 500 kg and 1 MT; USD 6,000 for enterprises with consumption between 1 and 20 MT; and USD 10,000 for enterprises with consumption greater than 20 MT. Incremental Operating Costs (IOCs) are calculated at USD 5.90/kg for HFOs and zero costs for HCs and pre-blended HCs.

Given the large number of enterprises that would be converted, technical assistance support needs to be provided to the enterprises in the country. This would include both eligible and non-eligible enterprises. Such support would be in the form of technical information outreach workshops for beneficiary enterprises (with total number of 5 workshops). The fund requested under the TA is USD125,000.

Summary of the overall costs for the polyurethane foam sector is presented below:

Table II-3: Approved cost break-up of PU foam sector plan

Enterprise size (MT/yr)	Number of enterprises	Technology	Consumption (MT)	ICC (USD)	IOC (USD)	Total cost (USD)	Approved Eligible cost (USD)
Below 1	9	Reduced HFO	3.71	20,200	21,889	42,089	39,219
1 to 5	26	Reduced HFO	72.56	156,000	428,080	584,080	549,758
5 to 20	22	Reduced HFO	194.42	132,000	1,147,054	1,279,054	1,206,137
Above 20	10	HCs and pre-blended HCs, one reduced HFO	374.66	1,800,771	380,000	2,180,771	2,056,448
Ineligible enterprise	10	low-GWP	67.13	n/a	n/a	n/a	n/a
TA							125,000
Total	**77**		**712.47**	**2,108,971**	**1,977,024**	**4,085,995**	**3,976,563**
Cost Effectiveness (CE) of eligible phase-out (USD/kg)							6.53
CE of project (USD/kg)							5.58

13. Solvent sector plan

Stage II does not include the phase out of HCFCs in the solvent sector since there are limited alternatives that are cost-effective, safe and low-GWP. Instead, only TA (USD 12,500) to the sector for a workshop on ODS-free alternatives will be provided, on the understanding that a proposal to phase out consumption in the solvent sector will be submitted in stage III of the HPMP.

14. Refrigeration and air-conditioning sector plan

The refrigeration and air-conditioning sector plan includes both manufacturing and servicing sector plan. The phase-out strategy for manufacturing sector will comprise of following component:

- Technical assistance (TA) for enterprises in manufacturing of refrigeration and air-conditioning equipment on conversion of HCFC-22 to low-GWP based alternative technology.

TA will be provided through workshops, one per year (USD 20,000), for five years at a total cost of USD 100,000 to support the conversion of enterprises to low-GWP alternatives (e.g., R-600a, carbon dioxide, ammonia, and low-GWP blends, should those become available) in the refrigeration sector and HFC-32, HC-290 and low-GWP blends, should those become available, in the AC sector. While non-Article 5-owned AC manufacturers are expected to phase-out their consumption without funding from the Multilateral Fund and following their strategy, TA activities would include participation of all enterprises in the RAC sector to inform them on alternative technologies and to facilitate the achievement of phase-out.

The phase-out strategy for servicing sector will comprise of following component:

- Service sector infrastructure capacity building through equipment support to technical training institution;
- Centers of excellence for training technicians on handling flammable refrigerants;

- Training of trainers for adoption of good service practices and servicing equipment using alternatives; and
- Technical support to the sector for information dissemination on emerging low-GWP alternatives.

This strategy considered for both manufacturing and servicing sector takes into account (a) need for the country to achieve their compliance targets, (b) market factors that affect the choice of technology by enterprises particularly the A2 owned enterprises1 and SMEs, (c) equipping service infrastructure to gear up adoption of good service practices and using low GWP flammable technologies.

In addition to these activities, the Government would implement policies and regulatory measures to prohibit use of HCFCs in manufacturing, assembly and installation of HCFC based equipment progressively keeping in mind compliance requirement and phase-out trends in the market.

Summary of the overall costs for RAC sector including servicing sector is presented below.

Table II-4: Cost break-up of RAC sector plan

Sr. no	Particulars	Cots (USD)
1	Technical assistance workshops (total 5 workshops: one per year for RAC manufacturing sector at USD 20,000 per year)	100,000
2	Equipment support to 21 training institutions in Malaysia on good servicing practices at USD 32,000 each	672,000
3	Equipment support for two centres of excellence (incremental) for training service technicians on handling flammable refrigerants	50,000
4	Training of trainers (5-day program for 100 trainers)	100,000
5	Customs and enforcement officers training for monitoring and controlling HCFCs (480 trainees)	200,000
6	Technology training on new refrigerants	119,000
7	Equipment for 51 authorized training centres	408,000
	Total	**1,649,000**

15. Project management activities:

The main activities under the project management component are.

- Prepare annual work plan for implementation of HPMP Stage-II;
- Manage operations of the staff of the project management unit;
- Identify beneficiaries and facilitate/ follow-up signature of performance based payment contracts with the beneficiaries;
- Project monitoring and verification with the industry;
- Ensure timely completion of verification activities as required under the Agreement and/or based on specific Executive Committee decision;
- Design and implement regulations for controlling and monitoring of HCFCs; and
- Knowledge management and documentation on technology and policy issues that would be helpful for HPMP implementation

[1] A2 owned air-conditioner manufacturers are expected to phase-out HCFC based air-conditioners on their own following their corporate technology strategy.

The Project Management Unit will start implementing the project from 2017 to 2021. Summary of the overall costs for PMU components for a period of 5 years is presented in Table 2-5.

Table II-5: Cost break-up of project management

Particulars	Costs (USD/year)	Costs (USD)
Project Office Staff – PMU (2 persons)	40,000	160,000
Operating expenses for project	20,000	80,000
Travel expenses	20,000	80,000
Verification expenses for enterprises	30,000	120,000
Annual verification	15,000	60,000
Total	**125,000**	**500,000**

16. Phase-out targets for HPMP Stage-II

The approved cost of the activities proposed in HPMP Stage-II amounts to USD 6,138,063, including USD 500,000 for the PMU costs. As shown in Table 2-6. HPMP Stage-II will result in the phase-out of 146.24 ODP tonnes of HCFCs with an overall cost effectiveness (CE) of USD 2.99/kg.

Table II-6: Approved cost for Stage II of the HPMP

Sector	Substance	MT	ODP tonnes	Costs (USD)	CE (USD/kg)
PU foam	HCFC-141b	608.55	66.94	3,976,563	6.53
AC manufacturing sector	HCFC-22	1,068.91	58.79	100,000	0.09
Refrigeration manufacturing	HCFC-22	5.27	0.29		
RAC servicing	HCFC-22	322.73	17.75	1,549,000	4.80
TA for solvent sector	n/a	-	-	12,500	n/a
PMU	n/a	-	-	500,000	n/a
Sub-total	All	2,005.45	143.77	6,138,063	3.06
HCFCs no longer consumed	HCFC-141	13.43	0.94	-	-
	HCFC-142b	12.15	0.79	-	-
	HCFC-21	18.50	0.74	-	-
Total	**All**	**2,049.54**	**146.24**	**6,138,063**	**2.99**

The net impact of HPMP Stage-II is presented in Table 2-7 with remaining eligible consumption after implementation of HPMP Stage-II.

Table II-7: Remaining eligible consumption after implementation of HPMP Stage-II (in ODP tonnes)

Substance	Annex	Group	Starting point	Stage I targets	Remaining consumption after Stage-I	Stage-II targets	Remaining consumption after Stag-II
HCFC-123	C	I	1.13		1.13	0.00	1.13
HCFC-141	C	I	0.94		0.94	0.94	0.00
HCFC-141b	C	I	162.54	94.6	67.94	66.94	1.00
HCFC-142b	C	I	0.79		0.79	0.79	0.00
HCFC-21	C	I	0.74		0.74	0.74	0.00
HCFC-22	C	I	349.54	17.25	332.29	76.83	255.46
HCFC-225	C	I	0.08		0.08	0.00	0.08
Total			**515.76**	**111.85**	**403.91**	**146.24**	**257.67**

Thus, the HPMP Stage-II of Malaysia for the period 2016 to 2021 will result in reduction of HCFC consumption by 49.94 per cent of the baseline.

Keeping in view the above phase-out to be achieved in HPMP Stage-II, the Government of Malaysia proposes to adopt the following targets for HCFC consumption levels up to 2021 (table 2-8). Along with the phase-out targets funding tranches for 2017, 2018, 2019 and 2021 are provided in Table 2-8.

Table II-8: HPMP Stage-II phase-out targets and tranche flow

Particulars	2017	2018	2019	2020	2021	2022	Total
Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	464.18	464.18	464.18	464.18	335.24	335.24	n/a
Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	438.40	438.40	438.40	400.00	335.24	309.46	n/a
Total funding flow (USD)	**3,507,938**	**0**	**0**	**2,475,225**	**154,900**	**0**	**6,138,063**

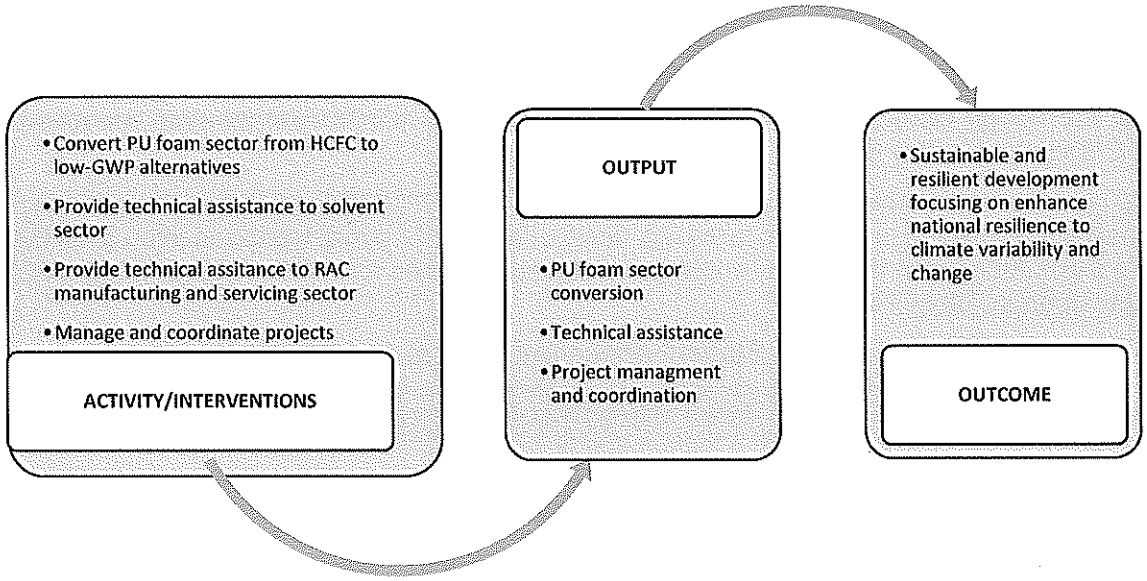
17. Project Objectives, Outcomes and Outputs/ Activities

The activities/interventions envisaged under the HPMP Stage-II will result in the following outputs:

- *Output 1: Conversion of PU foam sector.*
- *Output 2: Technical Assistance for foam, solvents and RAC manufacturing and servicing sector.*
- *Output 3: Project management and co-ordination.*

These outputs are expected to contribute to achieving the following Country Programme Outcome as defined in Country Programme Action Plan (CPAP) (2016-2020):

- *Priority 2. Sustainable and resilient development*
- *Priority 2a: Enhancing national resiliency to climate variability and change. Innovative mitigation actions promoting use of clean technology, sustainable production and consumption and eco-efficiency.*
- *Priority 2b: Value natural capital, reduce environmental impacts and improve access to quality ecosystem services.*



The projects envisaged under the HPMP Stage-II will promote inter sectoral coordination and capacity development to ensure effectiveness and efficiency across the various agencies involved in management of Ozone Depleting Substances. Malaysia has taken a proactive approach in phasing out controlled substances under the Montreal Protocol. It has formulated policies and legislations to restrict and limit the use of these controlled substances. These policies and strategies have provisions for the monitoring of the importation and consumption of controlled substances as well as for promoting the use of non-ODS substitutes and alternatives in existing industries and new investments.

This is evident where joint monitoring and enforcement activities are required, involving the Customs Department, Department of Environment, MITI, MNRE, UNDP and targeted beneficiaries. The National Ozone Unit will be responsible for the capacity building of the Customs Department, other agencies and targeted beneficiaries from the private sector involved in the management of Ozone Depleting Substances. Regular training, capacity building, awareness programme will be held to update their knowledge on new technology, regulations and policies, which will result in active participation from the stakeholders under the HPMP Stage-II. The partnership will be beneficial to all agencies concerned as information and knowledge will be shared for effective and efficient monitoring and enforcement activities.

Mainstreaming Gender and Vulnerable Communities Issues

Gender and community issues will be considered throughout the project planning and implementation stages. During the survey stage, elements of gender were incorporated in the

survey questionnaire. It was noted that even though women were not discriminated in participating at managerial level or as general worker, the nature of business, is not attractive to women in general. Nevertheless, there are still women who has partnerships in a company or at decision making level, but their numbers are few. Where ever possible, the project will ensure participation of women and the vulnerable groups during training, workshops, seminar and public awareness programme. With their participation in these activities, it will provide them with access to knowledge and skills they require to be active participants in other initiatives which address climate change. Where possible, their engagement throughout the project will be reported to monitor that their perspectives have been included to achieve the outcomes of the project.

III. RESULTS AND RESOURCES FRAMEWORK

Intended Outcome as stated in the UNDAF/Country Programme Results and Resource Framework: This project will contribute to achieving the following Country Programme Outcome as defined in Country Programme Action Plan (CPAP) (2016-2021):

Priority 2. Sustainable and resilient development

Priority 2a: Enhancing national resiliency to climate variability and change. Innovative mitigation actions promoting use of clean technology, sustainable production and consumption and eco-efficiency.

Priority 2b: Value natural capital, reduce environmental impacts and improve access to quality ecosystem services.

Outcome indicators as stated in the Country Programme [or Global/Regional] Results and Resources Framework, including baseline and targets:

Country Programme Indicators:
Indicator 1.1: Number of climate change mitigation actions which are funded and implemented in line with the Montreal Protocol requirements.

Indicator 2.2: Number of developed adaptation actions and strategies that strengthen climate resilience at the national and sub-national including local communities

Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances

Project title and Atlas Project Number: HCFC Phase-out Management Plan (HPMP) Stage-II for compliance with post 2015 control targets for Annex-C, Group-I substances, Project Number: 00101950

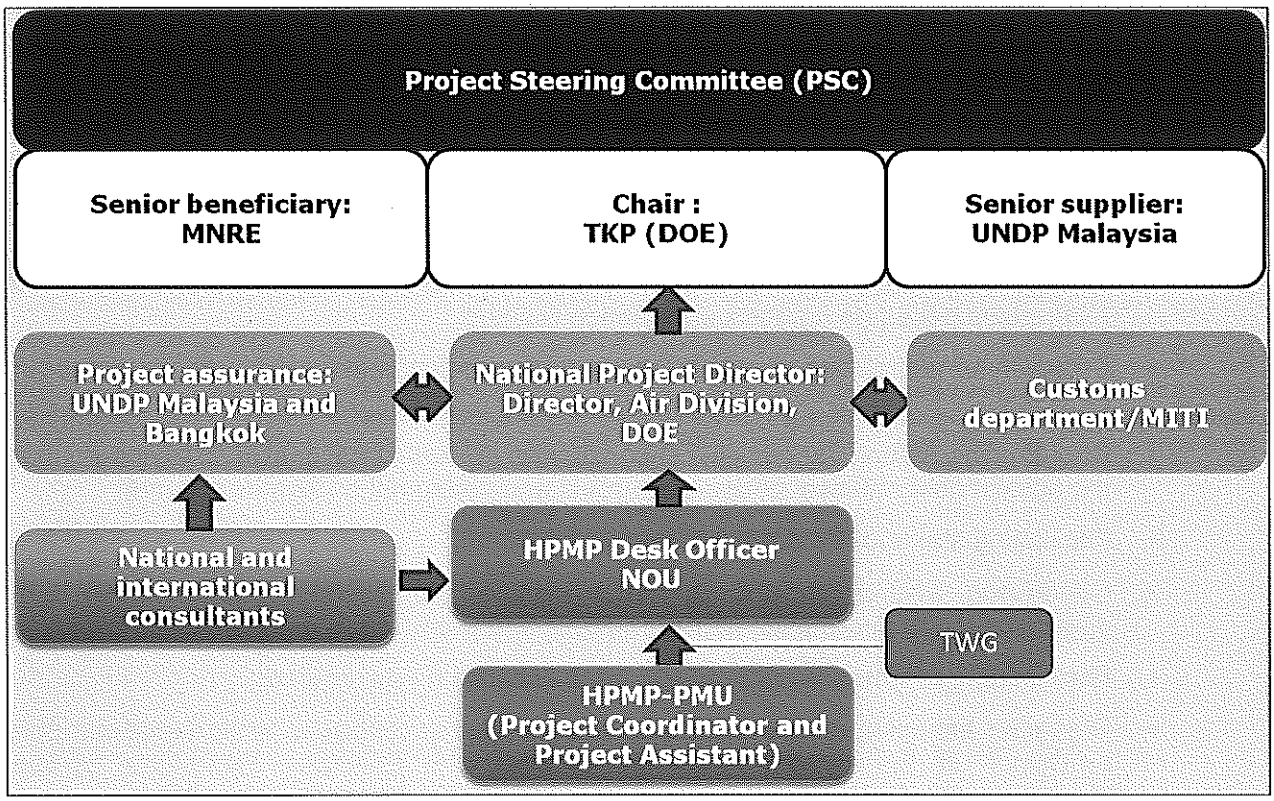
EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)						DATA COLLECTION METHODS & RISKS
			Value	Year	2017	2018	2019	2020	2021	2022	
Output 1: Conversion of PU foam sector	*1.1 Compliant to Montreal Protocol milestone for 2020 and reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022*	*NOU*	438.40 ODP tonnes	2016	438.40 ODP tonnes	438.40 ODP tonnes	400.00 ODP tonnes	335.24 ODP tonnes	309.46 ODP tonnes	294.63 ODP tonnes	Import permit system
	1.2 Minimum phase out of 78.37 ODP tonnes of HCFC-141b consumption over period of 5 years	*Foam manufacturing enterprises*	*0.00 ODP tonnes*	*2016*			*68.99 ODP tonnes*		*7.38 ODP tonnes*	*78.37 ODP tonnes*	*Enterprise level data collection on consumption of HCFC-141b*
Output 2: Technical Assistance	*2.1 Compliant to Montreal Protocol milestone for 2020 and reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 ODP tonnes by 1 January 2022*	*NOU*	438.40 ODP tonnes	2016	*438.40 ODP tonnes*	*438.40 ODP tonnes*	*400.00 ODP tonnes*	*335.24 ODP tonnes*	*309.46 ODP tonnes*	*294.63 ODP tonnes*	*Import permit system*
	2.2 Minimum phase out of 143.7 ODP tonnes of HCFC consumption under PU foam and RAC sector over period of 5 years	*RAC and foam manufacturing enterprises*	*0.00 ODP tonnes*	*2016*					*143.7 ODP tonnes*	*143.7 ODP tonnes*	*Enterprise level data collection on consumption of HCFC-141b*
Output 3: Project Management and co-ordination	*3.1 Compliant to Montreal Protocol milestone for year 2020 and reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 ODP tonnes by 1 January 2022*	*NOU*	438.40 ODP tonnes	2016	*438.40 ODP tonnes*	*438.40 ODP tonnes*	*400.00 ODP tonnes*	*335.24 ODP tonnes*	*309.46 ODP tonnes*	*294.63 ODP tonnes*	*Import permit system*
	3.2 Minimum reduction of 146.24 ODP tonnes in the national HCFC consumption by 1 January 2022	*NOU, RAC and foam manufacturing enterprises*	*0.00 ODP tonnes*	*2016*					*146.24 ODP tonnes*	*146.24 ODP tonnes*	*Import permit system and enterprise level data collection on consumption of HCFC*

IV. MANAGEMENT ARRANGEMENTS

The project will be implemented following UNDP's National Implementation Modality (NIM), per the Standard Basic Assistance Agreement between UNDP and the Government of Malaysia and the Country Programme.

Project management and coordination is an integral part of HPMP Stage-II. This component essentially helps in management of project activities under HPMP to ensure timely and systematic implementation of HPMP Stage-II. The main activities that would be undertaken under the project management component are listed in Section 2.

HPMP Stage II will be implemented under the National Implementation Modality (NIM). The framework that was successfully used during the Stage-I will be primarily used for supervision and management of implementation, with changes as necessary to respond to evolving needs. The Department of Environment (DOE) will coordinate the implementation, through the National Ozone Unit (NOU). The NOU will have the overall coordination role and will undertake the day-to-day implementation supervision and project management. The NOU will be supported by the Ministry of Natural Resources and Environment as well as national and international technical experts as needed. UNDP is designated as the implementing agency for the HPMP and will be responsible for project and financial management, as well as for providing technical and policy backstopping.



National Steering Committee (NSC)

A National Steering Committee (NSC) will provide guidance and direction to the project implementation process per the established detailed work plan monitoring tool. The Committee will be composed of representatives from EPU, MNRE, UNDP Malaysia, and other relevant stakeholders to be identified. The Chair of the NSC is the Secretary General of the Ministry of Natural Resources and Environment (MNRE).

Project Steering Committee (PSC)

A Project Steering Committee (NPSC) will be convened by the Department of Environment (DOE), and will serve as the Project's coordination and decision-making body. It will provide guidance and direction to the project implementation process per the established detailed work plan monitoring tool. The PSC will assist the NSC in handling all technical and operational matters of the project. The members of the PSC will consist of representatives from the DOE, EPU, Customs Department, MITI, MNRE, UNDP and other relevant stakeholders to be determined by the National Steering Committee.

Technical Working Group (TWG)

A Technical Working Group may be formed on the advice of the PSC. The technical working group will comprise of NOU (secretariat), UNDP, MITI, DOSH, experts in the area of foam and refrigerant to be identified by the secretariat. The PSC may also recommend any other agencies or experts to be part of the TWG.

Ozone Protection Unit, Air Division, DOE

The Ozone Protection Unit (OPU) within the Air Division of the Department of Environment (DOE) acts as a National Focal Point (NFP) for the implementation of the Montreal Protocol and is responsible for the overall coordination of ODS Phase-out programme in Malaysia. DOE will have the following roles and responsibilities:

- Overall responsibility for supervision and monitoring of implementation;
- Coordination of activities among various stakeholders and partners;
- Developing appropriate policy and regulatory actions, including review and coordination amongst different government departments and ensuring their enactment and enforcement;
- Executing performance-based agreements with enterprises participating in the HPMP for technology conversions and HCFC phase-out, and endorsing disbursements to the enterprises based on agreed performance targets;
- Establishing completion of enterprise level technology conversions and phase-out of HCFCs;
- Coordinating among various HCFC-consuming sectors at national level to ensure that the agreed national-level phase-out targets and consumption targets are met;
- Facilitating stakeholder consultations;
- Conducting awareness and outreach activities to ensure communication and dissemination of information to stakeholders and public;
- Facilitating performance verification and financial audit as required;
- Preparing annual implementation plans and progress reports in accordance with the provisions of the HPMP agreement between the Executive Committee of the Multilateral Fund and Government and reports as may be required by UNDP.

In addition, the NOU also acts as the Secretariat to the NSC and PSC.

United Nations Development Programme (UNDP)

UNDP is the implementing agency for the overall HPMP including all HCFC consuming sectors. UNDP supports the project in various ways, such as:

- Supporting DOE in ensuring an effective and smooth implementation process;
- Providing assistance for policy/regulatory actions, management and technical support to DOE as and when required;

- Assisting DOE in the process of consultations with stakeholders on the technical and logistical aspects of HPMP implementation;
- Supporting DOE in the review and endorsement process for enterprise-level technology conversions and phase-out agreements;
- Assisting DOE and stakeholders in alternative technologies and technology transfer;
- Assisting DOE in identification and recruitment of expert(s) and project staff as required;
- Ensuring performance verification and disbursements in accordance with the HPMP agreement between the Executive Committee of the Multilateral Fund and Government of Malaysia;
- Assisting DOE in the preparation and submission of annual implementation plans, progress reports and requests for future funding tranches, as stipulated in the HPMP agreement between the Executive Committee of the Multilateral Fund and Government of Malaysia;
- Undertaking consultations and clarifications with MLF Secretariat as may be required in context of submission and approval of annual implementation plans and progress reports;
- Carrying out the required monitoring and supervision missions.
- Carrying out procurement of equipment, project staff and consultants

National Project Director (NPD)

The National Project Director is a government appointee with sufficient hierarchy to guide the whole project structure, approve activities as laid out in the project document and approve payments as per the Annual Work plan. The person is also responsible for coordinating project activities among various parties for the project. Among these responsibilities are ensuring that the project document and project revisions requiring Government's approval are verified and processed through the Government coordinating authority in accordance with established procedures and providing direction and guidance on project related issues. The NPD is the Director, Air Division, Department of Environment.

National Project Manager (NPM)

The NPM is responsible in running the day-to-day coordination of the project with guidance from an authorized officer of the implementing agency. The person ensures that the project produces the results specified in the project document to the required standard of quality and within the specified constraints of time and cost. The NPM will be recruited and report administratively and programmatically to both the NPD and UNDP. The person will assist in timely preparation of the progress reports, and provide the information needed for disbursement of funds.

Project Assurance

The Project Assurance role supports the Project Board (the Project Steering Committee) by carrying out objective and independent project oversight and monitoring functions. This role ensures that appropriate project management milestones are managed and completed. Risks will be periodically reviewed to ensure the risks are mitigated and manageable. Necessary actions taken to overcome any project challenges will be discussed as well.

Financial Management

UNDP will provide required financial resources, based on approved Annual Work Plan (AWP), to the Implementing Partner to carry out project activities during the annual cycle. Under the Harmonized Approach to Cash Transfer (HACT), the following modalities may be used:

- Direct cash transfers to the Implementing Partner, for obligations and expenditures to be made by them in support of activities;
- Direct payments to vendors and other third parties, for obligations incurred by the Implementing Partner;
- Reimbursement to the Implementing Partner for obligations made and expenditure incurred by them in support of activities

The Funding Authorization and Certificate of Expenditures (FACE) form (Annex G) shall be used for all the above cash disbursements as well as for expenditure reporting. The Implementing partner and Project Manager will work closely with UNDP to monitor the use of the financial resources and are accountable for:

- Managing available resources under the HPMP Stage II to achieve the expected results

Maintaining an up to-date accounting system that contains records and controls to ensure the accuracy and reliability of financial information and reporting. Expenditures made should be in accordance with the Annual Work Plans and budgets.

At the end of a quarter/year, UNDP prepares a Combined Delivery Report (CDR) which records all disbursements made under the project for verification. The Implementing Partner and UNDP should sign this CDR.

A project revision shall be made when appropriate; to respond to changes in the development context or to adjust the design and resources allocation to ensure the effectiveness of the project provided that the project remains relevant to the Country Programme. A project revision shall be supported by the record of an approval decision made by the project PSC, and an updated and signed AWP.

UNDP Support Services

UNDP will provide Direct Project Services as requested by Government, i.e. Department of Environment, Ministry of Natural Resources and Environment (MNRE) and parties will enter an agreement with UNDP for support services in the form of procurement of goods and services during the project implementation process. In such a case, appropriate cost recovery will be charged as per UNDP rules and regulations. The support services will be outlined in the form of Letter of Agreement signed between DOE and UNDP (See Annex E.). In providing such support services, the UNDP Country Office shall ensure that the capacity of the Government-designated institution is strengthened. The UNDP Country Office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:

- Identification and/or recruitment of project and programme personnel;
- Identification and facilitation of training activities;
- Procurement of goods and services;

The above will be carried out based on UNDP policies and procedures following the principles of best value for money, fairness, integrity, transparency, and effective competition. UNDP shall charge to the project as per the Universal Price List and/or Local Price List where required.

UNDP will also charge for the support services provided as follows:

a) Direct cost for implementation support services (ISS) for activities under the project

In-Kind Contribution

In addition to the financial resources through UNDP, the implementing partner will provide the following in-kind contribution:

- Assist in gaining access to all relevant data and information required to for the project that is accessible for public viewing;
- Assist in coordinating with other agencies and ministries
- Office space for the Project Manager, consultants and experts at DOE
- Use of office support facilities by the Project Manager, consultants and experts (e.g. fax machine, stationery, photocopying machine, telephone), and secretarial support where applicable;
- Facilities for convening meetings, workshops and seminars.

Any reimbursable expenses can be borne by the project fund as agreed in the AWP.

V. MONITORING FRAMEWORK AND EVALUATION

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards.

M&E Oversight and monitoring responsibilities:

Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP M&E requirements are fulfilled to the highest quality.

Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response. The project board is the Project Steering Committee.

Project Implementing Partner: The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used and generated by the project supports national systems.

UNDP Country Office: The UNDP Country Office will support and provide technical advisory to the Project Manager as needed, including site visits as and when necessary. UNDP may initiate M&E missions according to the schedule outlined in the annual work plan. Mission reports will be circulated to the project team within one month of the mission. The UNDP Country Office will also ensure that the standard UNDP M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the UNDP ROAR. Any quality concerns flagged during these M&E activities must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

Audit: The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.[2]

VI. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the Standard Basic Assistance Agreement (SBAA) and all CPAP provisions apply to this document.

Consistent with the Article III of the SBAA, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

[2] See guidance here: https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx

VII. ANNEXES

ANNEX A: Multi-year Budget
ANNEX B: Social and Environmental Screening Template (SESP)
ANNEX C: Risk Log
ANNEX D: Terms of Reference
ANNEX E: Results of the capacity assessment of the Project Implementing Partners and HACT micro assessment
ANNEX F: FACE form
ANNEX G: Annual Project Report (APR)
ANNEX H List of Eligible SMEs
ANNEX I: Annual Workplan

ANNEX A : MULTI YEAR BUDGET

***Note 1:** Budget for years 2017 – 2018 presents 1st tranche amount of US$ 3,507,938 released by the ExCom. ****Note 2:** Balance funds amounting to US$2,630,125 will be released by MLF in tranches in 2020 and 2021. Total fund approved in principle by the ExCom for Stage II of HPMP of Malaysia is US $ 6,138,063 for period 2017 – 2021.

AWARD ID	00098730									
PROJECT ID	00101950									
Project Title	HCFC Phase-out Management Plan (HPMP) Stage II for compliance withpost-2015 control targets for Annex C, Group-1 substances									
Executing Agency	Department of Environment, Ministry of Natural Resources and Environment (MNRE)									
ATLAS Activity	**Responsible Party**	**Source of funds**	**ATLAS Code**	**ATLAS Budget Description**	**2017***	**2018***	**2019***	**2020****	**2021****	**Total**
Activity 1: Investment Projects, Polyurethane Foam Sector	DOE	63030	72100	Contractual services – companies	751,674	1,181,202	214,764	851,961.50	851,961.50	3,851.563
	DOE	63030	75700	Training, workshop and meeting	0	125,000	0	0	0	125,000
	Sub-Total				**751,674**	**1,306,202**	**214,764**	851,961.50	851,961.50	**3,976,563**
Activity 2: Servicing Sector	DOE	63030	71300	Local consultants	60,000	40,000	0	60,000	60,000	220,000
	DOE	63030	72200	Equipment	0	150,000	200,000	150,000	150,000	650,000
	DOE	63030	72100	Svc Contract-Co		99,548	0	60,000	60,000	219,548
	DOE	63030	75700	Training, workshop and meeting	0	200,000	200,000	85,976	85,976	571,952
	Sub-Total				**60,000**	**489,548**	**400,000**	355,976	355,976	**1,661,500**
Activity 3: Project Management and coordination	DOE	63030	71300	Local Consultant(verification)	0	0	15,000	0	15,000	30,000
	DOE	63030	71400	Contractual services – individual	20,000	40,000	40,000	40,000	20,000	160,000
	DOE	63030	71600	Travel	10,000	25,000	25,000	25,000	15,000	100,000
	DOE	63030	72100	Contractual services – Implementing partner	0	30,750	0	59,250	0	90,000
	DOE	63030	74500	Miscellaneous expenses	20,000	30,000	30,000	20,000	20,000	120,000
	Sub-Total				**50,000**	**125,750**	**110,000**	**144,250**	**70,000**	**500,000**
	GRAND TOTAL				**861,674**	**1,921,500**	**724,764**	**1,352,188**	**1,277,938**	**6,138,063**

ANNEX B. Social and Environmental Screening Template

Project Information

Project Information	
1. Project Title	HCFC Phase-out Management Plan (HPMP) Stage-II for compliance with post 2015 control targets for Annex-C, Group-I substances
2. Project Number	00101950
3. Location (Global/Region/Country)	Malaysia

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

The widespread use of Ozone Depleting Substances (ODS) and their mismanagement presents an enormous risk for air pollution that can damage the ozone layer with negative effects on people´s health. This impact is magnified due to the very high Global Warming Potential (GWP) of such substances, which are major contributors to climate change.

The proposed project's primary objective is to use a humanistic approach on implementing field activities required to protect human life and the environment, and as a final goal, allow people to have full access to their rights (independently of gender, race or believes) and accede to a safe natural capital as well as to access green technologies that have minimal impact to the environment.

Therefore, during project implementation, consultations are expected to be conducted with the wide range of stakeholders involved and impacted by it (including civil society groups) to exchange experience and knowledge and to assure that their interests are taken into account in the process of technology conversion of the private companies.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors — notably size and physiological differences between women and men and between adults and children — influence susceptibility to health damage from exposure to toxic chemicals. In this specific case, the substances being phase-out pose no direct harm to human beings, but by depleting the ozone layer and increasing the global temperature, they are very likely to put into danger certain groups, such as women and children.

ODS use, due to their environmental impacts, can indirectly impact women's health. Contamination impacts and end user impacts on women could be reduced with the replacement of ODS with non-ODS alternatives which may have lower negative impact on the environment. It will also enhance women's ability to use, develop and protect natural resources, considering the different roles and positions of women and men in accessing environmental goods and services.

There will be a good amount of employment opportunity for the local workforce during the project implementation, and which will continue in a sustained manner over the project life time. Equal opportunity will enhance social parity, women enlistment, and social standards. In addition, the project is expected to deliver training and capacity development programme, as well as to develop and implement awareness programmes that will enhance human and institutional capacity. The project will also ensure the participation, representation and buy-in of vulnerable and woman populations in the project implementation.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The main sustainable pillar (environmental pillar) of the project is related to the complete and safe elimination of the current production processes and practices that use ODS. The project will ensure application of sustainable and low carbon/green technologies at (economical pillar) a reasonable cost in the selected industries that can be maintained by industries overtime. This action will have low associated GHG emissions and zero ozone depletion potential which will have a positive impact on the environment both locally and

globally. Upon successful completion, the project will result in net sustainable reductions of minimum 146.24 ODP tonnes (2,049.54 MT) in the national HCFC consumption by 1 January 2022. In addition, the project will result in net CO_2-equivalent emission reductions of about 1,022,207.20 tonnes annually from 1 January 2022 onwards.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses).*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	*Impact and Probability (1-5)*	*Significance (Low, Moderate, High)*	*Comments*	*Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.*
Risk-1: Would the Project generate potential adverse transboundary or global environmental concerns?	I = 2 P = 1	**Low**	Adoption of low-GWP and non-ODS substances as part of the ODS phase-out activity will reduce negative environmental impacts on ozone layer and climate change.	Alternative substances being used in the project will be subject of careful usage that will imply use of best available techniques in production process and proper training on handling of alternative substances will be given to end users.
Risk 2: Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	I = 1 P = 2	**Low**	There is risk of fire/ explosions during retrofit/construction of RAC systems and manufacturing if low-GWP or non-ODS substances are not handled properly.	The project will use proper safety measures including basic education program and international Occupational safety and health administration standards during implementation phase. Audit will be conducted to ensure proper adherence to the safety measures.
Risk 3: Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	I = 1 P = 2	**Low**	There is risk of fire/ explosions during storage & transportation of low-GWP alternatives if it is not handled properly.	The project will use proper safety measures including basic education program and international occupational safety and health administration standards during implementation phase. Audit will be conducted to ensure proper adherence to the safety measures.
Risk 4: Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical,	I = 4 P = 2	**Moderate**	Foam manufacturing process involves use of many chemicals that are either flammable or	The project will apply best available techniques and international Occupational safety and health administration standards in the conversion processes in each facility. It will also be ensured that

biological, and radiological hazards during Project construction, operation, or decommissioning?			toxic to humans. So, bad practices and mishandling may result in accidents with workers.	proper training and safeguards are in place at each recipient company.
Risk 5: Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	I = 4 P = 1	**Low**	In a few conversion processes under the project, flammable substances will be used. Lack of adequate training on the production process using flammable substances may result in severe accidents.	The project will apply best available techniques and international standards in the conversion processes in each facility. It will also be ensured that proper training and safeguards are in place at each recipient company.
Risk 6: Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	I = 1 P = 1	**Low**	There is always a risk of refrigerant leakage/emission during manufacturing and servicing of RAC equipment. Foam manufacturing also lead to leakage of blowing agents if it is not handled properly. The emission of these substances will have negative impact on the local and global environment.	Technical assistance program envisaged under the project will help ensure in reduction of refrigerant/blowing agent leakage during manufacturing and servicing activity.
Risk 7: Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	I = 1 P = 2	**Low**	Lack of proper disposal procedures of equipment and substances being retired may result in generation of non-hazardous waste.	The project will implement a proper monitoring and evaluation program of the equipment being retired and disposed of, to assure that recycling and proper disposal activities are applied during such processes.

QUESTION 4: What is the overall Project risk categorization?

Select one (see SESP for guidance)		Comments
Low Risk	☒	The screening process identified risks inherent to the own nature of the manufacturing and chemical industry (foam manufacturing and RAC equipment manufacturing) involved in the project activities. Although these risks exist, in general, they have low probability to happen first due to the history of these industries. In addition, use of best available technologies as well as application of safety and environmental practices will help in mitigating the identified risks.
Moderate Risk	☐	
High Risk	☐	

	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		Comments
	Principle 1: Human Rights	☐	
	Principle 2: Gender Equality and Women's Empowerment	☐	
	1. Biodiversity Conservation and Natural Resource Management	☒	Generation of potential adverse transboundary or global environmental concerns due lack of proper management of alternative chemicals.
	2. Climate Change Mitigation and Adaptation	☐	
	3. Community Health, Safety and Working Conditions	☒	Safety risks and working conditions related to the application of certain alternatives and chemicals in the production process that are flammable or toxic.
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Pollution Prevention and Resource Efficiency	☒	Potential release of chemicals and generation of non-hazardous waste to the environment during manufacturing and servicing process will lead to adverse local and global environmental impact.

Final Sign Off

Signature	*Date*	*Description*
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		**Answer (Yes/No)**
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?[3]	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Are there measures or mechanisms in place to respond to local community grievances?	No
6.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
7.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
8.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
9.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
3.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No

[3] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[4] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No

[4] In regards to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions?5	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.4	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.5	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No

[5] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.6	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.7	Would the Project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	No
6.8	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

ANNEX C: RISK LOG

No	Description	Date Identified	Type	Impact and Probability *(1= low, 5=high)*	Countermeasures/ Management Response	Owner
1	Procurement and decision making process	Project initiation date	Operational	Delay in implementation and enforcement of the envisaged regulatory measures. Effective controls on HCFCs will not be in place and may lead to non-compliance with provisions of ExCom agreement *P=3*	UNDP support will improve outreach to potential consultants and consultancy firms, as well as speed up procurement processes. Close and regular coordination between UNDP, DOE and other government departments and agencies will make the decision-making process faster.	DOE/UNDP
2	Management and coordination between key government agencies and ministries, as well as other stakeholders	Project initiation date	Programme	Delay in implementation and effective controls on HCFCs will not be in place and may lead to non-compliance with provisions of ExCom agreement P =2,	The project will make use the management arrangement established under the HPMP Stage-I and close and regular coordination between UNDP, DOE and other government departments and agencies will be maintained.	DOE/UNDP
2	Insufficient awareness, technical knowledge, data availability, availability of alternative technologies	Project Implementation	Programme	HCFC phase-out at enterprise-level may not take place as planned P = 3,	Improved project management through regular monitoring of enterprise-level activities. Regular consultations with technical experts and closely monitoring technological developments	DOE/UNDP
3	Timely disbursement of fund and any short-fall in funds	Project Implementation	Operational	HCFC phase-out at enterprise-level may not take place as planned P = 1,	Cost effectiveness will be closely monitored and completion of actives such as verification as planned.	DOE/UNDP

ANNEX D: TERMS OF REFERENCE

PROJECT STEERING COMMITTEE (PSC)

The Project Steering Committee will monitor the conduct of the project and provide strategic guidance to the project team on the implementation of the project. The PSC will be chaired by the Director General, Department of Environment, Ministry of Natural Resources and Environment, or someone assigned by the Director General.

Members of the PSC will consist of representatives from EPU (Environment and Natural Resources Section) and EPU (Social and International Cooperation Sections), UNDP and other relevant stakeholders to be determined by the Committee.

The PSC will meet at least once a year and reports to the National Steering Committee on progress of activities. Then National Ozone Unit will act as Secretariat to the PSC. The PSC will have the following duties and responsibilities:

- Provide policy guidance on matters pertaining to project implementation;
- Monitor and evaluate the implementation of the project towards fulfilment of the objectives stated in the project document;
- Review, approve and endorse proposed work plans and budget and any issues raised by the project;
- Initiate remedial actions to overcome all constraints in progress of the project;
- Review and approve relevant changes to the project design;
- Coordinate the roles of the various organizations involved in the execution of the project and ensure harmony with related activities; and
- Advice on the long-term sustainability strategy of the project.
- Review and approve all related reports to the project.

NATIONAL PROJECT DIRECTOR

The National Project Director (NPD) is a staff member of the Government of Malaysia's implementing agency of a UNDP-supported project and in this case will be the Director, Air Division, Department of Environment. The main responsibility is to coordinate project activities among the main project partners, and ensure effective and efficient running of the project.

The NPD is tasked with the following functions:

- Ensuring that the project document and project revisions requiring Government's approval are processed through the Government co- coordinating authority, in accordance with established procedures;
- Ensure workplans are prepared, in discussion with UNDP, and submitted in timely manner.
- Mobilising national institutional mechanisms for smooth progress of project;
- Providing formal project/deliverable acceptance and sign-off upon verification of the project outputs;
- Reviewing project status reports;
- Providing direction and guidance on project-related issues; and
- Providing advice and guidance to the project team.

ANNEX E. RESULTS OF THE CAPACITY ASSESSMENT OF THE PROJECT IMPLEMENTING PARTNER AND HACT MICRO ASSESSMENT

MOORE STEPHENS

UNDP Micro Assessment

Department of Environment, Malaysia

Moore Stephens LLP Chartered Accountants

London

5 July 2016

Moore Stephens LLP
150 Aldersgate Street
London
EC1A 4AB

Partner: Mark Henderson
mark.henderson@moorestephens.com

Contents

1. MICRO-ASSESSMENT FINDINGS

1.1. RISK ASSESSMENT RESULTS

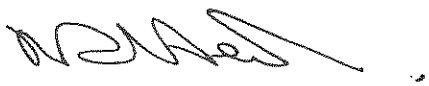
Tested subject area	Risk assessment*	Comments
1. Implementing Partner	Low	The IP is a government organisation in Malaysia that is responsible for protecting the environment. The organisation is under the purview of the Ministry of Natural Resources and Environment of Malaysia.
2. Programme Management	Low	The organisation prepares work programmes based on the project document signed by UNDP and the government of Malaysia. Work programmes include targets and baselines against which progress on the objectives is assessed. Regular meetings, site visits and check lists are used to monitor and evaluate the progress of the project.
3. Organizational Structure and Staffing	Low	The organisational structure and number of people in the accounting department are adequate for the current volume and complexity of operations. Officers and employees of the finance department are adequately trained to ensure they are equipped with the necessary skills to carry-out their function.
4. Accounting Policies and Procedures	Low	The organisation uses a computerised accounting system to ensure control in preparation and approval of transactions and cost allocation to various funding sources. Finance department has various units to ensure segregation of duties and financial control over transactions. Budgets provide a reasonable measure of financial control. The internal audit function is carried-out by the Ministry of Natural Resources and Environment.
5. Reporting and Monitoring	Low	Annual reports are prepared by the organisation and are subject to audit by the Auditor General of Malaysia.
6. Information Systems	Low	The IP uses the accounting system ESPKB (Electronic payment and control system) which generates all required reports automatically. All finance staff are trained on how to use this system.
7. Procurement	Low	Procurement policies and procedures of the organisation are in compliance with the rules and regulations of the government. Approval thresholds are set out in the circular issued by the Treasury Department. Approval of authorised personnel is required before purchase transactions can be carried out.

Overall risk assessment	**Low**	

** High, Significant, Moderate, Low*

1.2. SUMMARY OF MANAGEMENT CONTROL FINDINGS

There were no management control findings.



Mark Henderson
Partner
Moore Stephens LLP

5 July 2016

ANNEXES

ANNEX 1: THE ORGANISATION

Mission

The IP is a government agency of Malaysia responsible for ensuring sustainable development of the country by protecting the environment. The organisation is under the purview of the Ministry of Natural Resources and Environment.

Key financial information

The most recent financial information for the organisation shows the following:

	Year ended 31 December 2014 (MYR)
Incoming resources	1,448,130.76
Resources expended	3,676,838.20
Net surplus (deficit)	(2,228,707.44)

ANNEX 2: MANAGEMENT CONTROL FINDINGS

There were no management control findings.

ANNEX 3: MICRO ASSESSMENT QUESTIONNAIRE

Instructions: This questionnaire contains various questions related to nine subject areas, summarized further below. Please answer each question by indicating your response as 'Yes', 'No' or 'N/A' (for 'not applicable'). Also, use the 'Comments' section next to each question to provide details of your assessment or to highlight any important matters. This document will be referenced subsequently by the agency when performing additional assurance activities related to the IP. Sufficient details should be provided in this document for the agency to understand the details of each response.

Assign a risk rating (high, significant, moderate or low) for each question based on the response obtained. (For example, if the question addresses an item that should ideally be marked 'Yes' but was marked 'No', it should be assessed for the level of risk it presents to the IP's financial management system). Assigning risk ratings to each question requires judgment by the assessor as to how the response will affect the IP's financial management system. The risk ratings to be used are:

- ***High*** – Response to question/subject matter provides a risk to the overall financial management system that has both a high likelihood of occurring and a potentially negative impact on the IP's ability to execute the programme in accordance with the work plan and stated objectives. Additionally, this risk has not been mitigated by any other controls/process that have been implemented by the IP;
- ***Significant*** – Response to question/subject matter provides a risk to the overall financial management system that has either a significant likelihood of occurring or a potentially negative impact on the IP's ability to execute the programme in accordance with the work plan and stated objectives;
- ***Moderate*** – Response to question/subject matter provides a risk to the overall financial management system that has a moderate likelihood of occurring and a potentially negative impact on the IP's ability to execute the programme in accordance with the work plan and stated objectives; or
- ***Low*** – Response to question/subject matter provides a risk to the overall financial management system that has a low likelihood of occurring and a potentially negative impact on the IP's ability to execute the programme in accordance with the work plan and stated objectives.

To determine the overall risk assessment for a subject matter section (e.g., Section 1. Implementing Partner), points are assigned that correlate with the level of risk. The points assigned to each question should be totaled and averaged based on the number of questions in the subject matter section. Questions that are not applicable to the IP (marked as 'N/A') should not be assigned a risk rating and should be removed from the total number of questions for the calculation. Points should be assigned as follows:

- H – High risk: 4 points
- S – Significant risk: 3 points
- M – Moderate risk: 2 points
- L – Low risk: 1 point

The average number of points calculated should then be compared to the points rating above and assigned a corresponding risk (i.e., an average of 2.0 would indicate a moderate risk rating for the subject matter section). Numbers should be rounded as follows:

- 0.1 to 0.49: Round down to the closest whole number (i.e., an average of 3.3 would be rounded down to 3.0. indicating a 'significant' risk rating);
- 0.5 to 0.99: Round up to the closest whole number (i.e., an average of 1.99 would be rounded up to a 2.0, indicating a 'moderate' risk rating).

The same process should be followed for determining the overall risk assessment for the IP once the checklist has been completed

Summary of Risks Related to the Financial Management Capacity of the Implementing Partner				
Tested subject area (see subsequent pages for details of each subject area summarized below)				
	Total number of risk points	**Total number of applicable questions**	**Overall risk assessment**	**Comments**
1. Implementing Partner	5	5	1	The IP is a government organisation in Malaysia that is responsible for protecting the environment. The organisation is under the purview of the Ministry of Natural Resources and Environment of Malaysia.
2. Programme Management	7	7	1	The organisation prepares work programmes based on the project document signed by UNDP and the government of Malaysia. Work programmes include targets and baselines against which progress on the objectives is assessed. Regular meetings, site visits and check lists are used to monitor and evaluate the progress of the project.
3. Organizational Structure and Staffing	6	6	1	The organisational structure and number of people in the accounting department are adequate for the current volume and complexity of operations. Officers and employees of the finance department are adequately trained to ensure they are equipped with the necessary skills to carry-out their function.

Summary of Risks Related to the Financial Management Capacity of the Implementing Partner				
Tested subject area (see subsequent pages for details of each subject area summarized below)				
	Total number of risk points	**Total number of applicable questions**	**Overall risk assessment**	**Comments**
4. Accounting Policies and Procedures	37	35	1	The organisation uses a computerised accounting system to ensure control in preparation and approval of transactions and cost allocation to various funding sources. Finance department has various units to ensure segregation of duties and financial control over transactions. Budgets provide a reasonable measure of financial control. The internal audit function is carried-out by the Ministry of Natural Resources and Environment.
5. Reporting and Monitoring	5	5	1	Annual reports are prepared by the organisation and are subject to audit by the Auditor General of Malaysia.
6. Information Systems	5	4	1	The IP uses the accounting system ESPKB (Electronic payment and control system) which generates all required reports automatically. All finance staff are trained on how to use this system.
7. Procurement	10	10	1	Procurement policies and procedures of the organisation are in compliance with the rules and regulations of the government. Approval thresholds are set out in the circular issued by the Treasury Department. Approval of authorised personnel is required before purchase transactions can be carried out.
Total:	**75**	**72**	**1**	

Micro Assessment Questionnaire

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
1. Implementing Partner						
1.1 Is the IP legally registered? If so, is it in compliance with registration requirements? Please note the legal status and date of registration of the entity.			✓	IP is registered in the country where the programme operates and is current with registration/reporting requirements.	-	The organisation is a government agency and thus, not required to be legally registered. The organisation is responsible for ensuring sustainable development of the country by protecting the environment. The organisation is under the purview of the Ministry of Natural Resources and Environment.
1.2 Has the IP received United Nations resources in the past? If so, provide details of amounts, from which agency, for what purpose and whether there were any issues.	✓			IP has received United Nations resources in the past and no issues were encountered with utilizing these funds.	1	The organisation had received funding from UNIDO in 1996 for phase-out of Chlorofluocarbon (CFC) in Malaysia.
1.3 Does the IP have statutory reporting requirements? If so, are they in compliance with such requirements?	✓			The IP is compliant with applicable statutory requirements.	1	The organisation is required to prepare monthly and annual reports. The annual reports will be audited by the Auditor General. The latest audited annual report is for the calendar year ended December 31, 2014.
1.4 Is the governing body of the IP independent from management?			✓	The governing body of the IP is independent from management.	-	As a government agency, the IP does not have separate governing body. The IP's operations are monitored by the Director General through monthly and quarterly reporting. In addition, the organisation is reporting to the Ministry of Natural Resources and Environment.
1.5 Does the governing body meet on a regular basis and perform oversight functions?			✓		-	As a government agency, the IP does not have separate governing body. The IP's operations are monitored by the Director General through monthly and quarterly reporting. In addition, the organisation is reporting to the Ministry of Natural Resources and Environment.
1.6 Does the IP show basic financial stability in-country (core resources; funding trend) *Provide the amount of total assets, total liabilities, income and expenditure for the current and prior fiscal year.*			✓	The IP appears to have been solvent (i.e. total assets greater than total liabilities) for the past three fiscal years.	-	The IP is a government agency and thus, the organisation's operations are supported by the national government. Going concern is not therefore considered a risk.
1.7 Can the IP easily receive funds? Have there been any major problems in the past in the receipt of funds, particularly where the funds flow from government ministries?	✓				1	Yes, the IP can easily received funds from donors. Funds received will be handled based on the policies and procedures of the national government of Malaysia. We were informed by the programme manager that no major issues have been encountered in the past relating to receipts of funds. In addition, as a government agency, the IP has no problem in receiving funds from the government.
1.8 Does the IP have any pending legal actions against it? *If so, provide details and actions taken by the IP to resolve the legal action.*		✓		The IP does not have any pending legal actions against it.	1	As per discussion with the programme manager, the IP does not have any pending legal action against it.
1.9 Does the IP have any key financial or operational risks that are not covered by this questionnaire? If so, please describe. Examples: foreign exchange risk; cash receipts.		✓			1	None, there are no other financial and operational risk that are not covered by this questionnaire.
Total number of questions in subject area:	9					
Number of questions marked 'N/A' in subject area:	4					
Total number of applicable questions in subject area:	5					
Total number of risk points:					5	
Implementing partner overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
2. Programme Management						
2.1. Does the IP have and use sufficiently detailed written policies, procedures and other tools (e.g. project development checklist, work planning templates, work planning schedule) to develop programmes and plans?	✔				1	Yes, the IP uses the project document signed by the government of Malaysia and UNDP in preparation of work programmes and plans for activities. The Project document is the result of workshops and consultation by the government and UNDP with the potential recipients in order to address certain issues and potential risk like global warming and ozone layer depletion. The prepared workplans and activities will be reviewed and approved by the Project Steering Committee before they can be executed.
2.2. Do work plans specify expected results and the activities to be carried out to achieve results, with a time frame and budget for the activities?	✔				1	The project document lists areas of concern and the objectives that need to be achieved to address such concern. In preparing the workplan, the Programme director ensures that the activities being proposed will achieve the stated objectives in the Project documents. In addition, the timeframe for each activities is included for monitoring of activities.
2.3 Does the IP identify the potential risks for programme delivery and mechanisms to mitigate them?	✔				1	In the preparation of the project documents, the potential risks and barriers in the implementation of the project had been considered. Further, proposal had been made to mitigate those risks and barriers. These are all documented in the project documents. Additional risks and barriers being encountered during the implementation of the project not considered during the preparation of the project document are reported in the quarterly progress report.
2.4 Does the IP have and use sufficiently detailed policies, procedures, guidelines and other tools (checklists, templates) for monitoring and evaluation?	✔				1	The organisation has policies and procedures in place for monitoring and evaluation of the progress of the project. Moreover, a checklist template is used to ensure consistent evaluation of the project implementation.
2.5 Does the IP have M&E frameworks for its programmes, with indicators, baselines, and targets to monitor achievement of programme results?	✔				1	In preparation of the work plan and activities, the organisation ensures that the activities are in line with the objectives of the project document. Baselines and targets are clearly indicated in the work plan to facilitate monitoring of the project objectives' achievement.
2.6 Does the IP carry out and document monitoring activities such as regular review meetings, spot checks, on-site project visits, etc.	✔				1	Site visits and quarterly meeting are carried-out and properly documented to ensure that the preparation of reports are timely made.
2.7 Does the IP systematically collect, monitor and evaluate data on the achievement of project results?	✔				1	After the each site visit, the project team prepares a report based on the template provided. In addition, quarterly meetings are properly recorded in the minutes of the meeting. Progress reports are made by collating the inputs from the site visits and minutes of meetings. The progress reports will be submitted to the UNDP for review and approval.
2.8 Is it evident that the IP followed up on independent evaluation recommendations?			✔		-	Not applicable. The project has not been subject to independent evaluation before.
Total number of questions in subject area:	8					
Number of questions marked 'N/A' in subject area:	1					
Total number of applicable questions in subject area:	7					
Total number of risk points:					7	
Funds flow overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
3. Organizational Structure and Staffing						
3.1 Are the IP's recruitment, employment and personnel practices clearly defined and followed, and do they embrace transparency and competition?	✓				1	The recruitment of new officers and employees of the organisation is handled by the Public Service Department of Malaysia. In addition, the organisation follows the policies and procedures of national government which include key performance indicators to evaluate staff. These policies and procedures are transparent and embody fair competition among staff.
3.2 Does the IP have clearly defined job descriptions?	✓				1	The IP has specific job descriptions for officers and employees.
3.3 Is the organisational structure of the finance and programme management departments, and competency of staff, appropriate for the complexity of the IP and the scale of activities? Identify the key staff, including job titles, responsibilities, educational backgrounds and professional experience.	✓			The level of posts and competency of staff are appropriate for the level of financial volume in the accounting/finance department.	1	Yes, we believe that the finance department has an adequate organisation structure to ensure that transactions are properly recorded and monitored. In addition, the competency and experience of finance staff are adequate to address the complexity of the transactions of the organisation. Head of Administration and Finance Azman Bin Mamat Job title: Accountant Responsibilities: Responsible for day to day finance and accounts operations Educational background: Bachelor in Accounting
3.4 Is the IP's accounting/finance function staffed adequately to ensure sufficient controls are in place to manage agency funds?	✓			The IP's accounting/finance function is staffed adequately to ensure sufficient controls are in place to manage agency funds.	1	The finance department has 16 staff to ensure transactions are properly processed and recorded in the accounting system. In addition, the computerised accounting system facilitates recording and monitoring of the transactions of the organisation.
3.5 Are accounting/finance staff familiar with United Nations procedures related to cash transfers (specifically the HACT framework)?	✓			The accounting/finance staff are familiar with United Nations procedures related to cash transfers (specifically the HACT framework).	1	Yes, the officers of the IP are familiar with the UN procedures. The UN agency is closely working with the organisation to ensure that reporting and other requirements are timely complied with by the IP.
3.6 Does the IP have training policies for accounting/finance/ programme management staff? Are necessary training activities undertaken?	✓			The IP has training policies for accounting/finance staff, which are undertaken as planned.	1	Yes, the IP has training policies for officers and employees, including the finance officers. Each officer and employee is required to undergo a training for at least 7 days per year. These training policies are included in the Key Performance Indicator for officers and employees.
3.7 Does the IP perform background verification/checks on all new accounting/finance and management positions?			✓	The IP performs background verification/checks on all new accounting/finance and management positions.	-	Background verification of officers and employees are handled by the Public Service Commission and Public Service Department of Malaysia. As such, these activities are not handled by the organisation.
Total number of questions in subject area:	7					
Number of questions marked 'N/A' in subject area:	1					
Total number of applicable questions in subject area:	6					
Total number of risk points:					6	
Organizational structure and staffing overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
4. Accounting Policies and Procedures						
4a. General						
4.1 Does the IP have an accounting system that allows for proper recording of financial transactions from United Nations agencies, including allocation of expenditures in accordance with the respective components, disbursement categories and sources of funds?	✔			The IP has an accounting system that allows for proper recording of financial transactions from United Nations agencies, including allocation of expenditures in accordance with the respective components, disbursement categories and sources of funds.	1	Yes, the IP is a government agency and follows policies and procedures promulgated by the Ministry of Finance. The IP uses the computerized accounting system (locally known as "ESPKB") to record and monitor the transactions of the organisation. The system allows creation of trust fund accounts wherein transactions of UN funded projects may be recorded. In addition, reports for funds received, expenses and balance can be easily generated from the accounting system.
4.2 Are controls in place concerning preparation and approval of transactions, ensuring that all transactions are correctly made and adequately justified?	✔			Controls are in place concerning preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained.	1	Yes, all transactions follow an approval process of the government as promulgated by the Ministry of Finance. The IP's computerised system controls and monitors transactions. Thus, payments will not be processed unless reviewed and approved by authorised personnel. Before a transaction can be processed by the finance department, the user department should have completed all the necessary forms and compiled all the supporting documents. In addition, approval from the head of the department must be obtained. Then, the finance department will review the documentation and ensures that all required supporting documents have been submitted. After which, the finance department records the transaction in the computerized accounting system and forwards the documents to the Treasury department, a separate government agency, for payment.
4.3 Are controls in place for accurate cost allocations to the various funding sources in accordance with established agreements?	✔			Controls are in place for accurate cost allocations to the various funding sources in accordance with established agreements.	1	The IP uses a coding system to ensure that expenses are properly allocated/reported to appropriate funding sources. The transaction can not be processed unless the funding code has been reflected in the voucher.
4.4 Are the general ledger and subsidiary ledgers reconciled at least monthly? Are explanations provided for significant reconciling items?	✔			The general ledger and subsidiary ledgers are reconciled at least monthly, and explanations are provided for significant reconciling items.	1	Yes, the finance department performs monthly reconciliation of the general ledger and the subsidiary ledger. In addition, they are required to reconcile with the monthly reports of revenue, expenses and trust funds generated by the general accountant with the records of the organisation.
4.5 Are all accounting and supporting documents retained in an organised system that allows authorized users easy access?	✔			Accounting and supporting documents are retained permanently in a defined system that allows authorized users easy access.	1	Yes, the documents are organised based on the voucher reference number for easy retrieval. Vouchers and supporting documents are retained for 7 years before they are destroyed.
4b. Segregation of duties						
4.6 Are the following functional responsibilities performed by different units or individuals: (a) authorization to execute a transaction; (b) recording of the transaction; and (c) custody of assets involved in the transaction?	✔			The following functional responsibilities are performed by different units/individuals: (a) authorization to execute a transaction; (b) recording of the transaction; and (c) custody of assets involved in the transaction.	1	The IP's finance department has different units that are responsible for different functions of the accounting cycle. Authorisation of the transaction is the responsibility of the relevant department head, recording is handled by the accounting unit and the payment is made by the treasury department, a separate government agency.
4.7 Are the functions of ordering, receiving, accounting for and paying for goods and services appropriately segregated?	✔			The functions of ordering, receiving, accounting for and paying for goods and services are appropriately segregated.	1	Transactions cannot be processed in the computerised system unless approved by authorised personnel. Ordering and receiving is handled by the asset management unit, recording is the responsibility of the accounting unit and the payment centralised in the treasury department.
4.8 Are bank reconciliations prepared by individuals other than those who make or approve payments?			✔	Bank reconciliations are prepared by individuals other than those who make or approve payments.	-	No bank reconciliation is being prepared since the department does not maintain a bank account.All cash and cash payment transactions are handled by the Treasury Department.

4c. Budgeting system						
4.9 Are budgets prepared for all activities in sufficient detail to provide a meaningful tool for monitoring subsequent performance?	✓			IP budgets are prepared for all activities in sufficient detail to provide a meaningful tool for monitoring subsequent performance	1	The IP is a government agency which follows the requirement of the Ministry of finance for budget preparations. Budgets are prepared using the Ministry of Finance's pro-forma where budget lines clearly indicate the nature of expenses that be easily used for budget monitoring.
4.10 Are actual expenditures compared to the budget with reasonable frequency? Are explanations required for significant variations from the budget?	✓			Actual expenditures are compared to the budget with reasonable frequency, and explanations are required for significant variations from the budget.	1	The IP is required to provide quarterly reports which include budget analysis. The reports are submitted to department head for review and approval. Any discrepancy is required to be provided with reasonable explanations.
4.11 Is prior approval sought for budget amendments in a timely way?	✓			Approvals are required prior to significant variations from the budget.	1	Prior approval is required from ministry of natural resources and environment and ministry of finance before any amendment can be made.
4.12 Are IP budgets approved formally at an appropriate level?	✓			The IP has a designated individual(s) responsible for preparation and approval of budgets related to agency funding.	1	Budgets are prepared by the department are approved by the head before they are submitted to the Ministry of Natural Resources and Environment for review and approval. The budgets will then be submitted to the Ministry of Finance for review then, to the parliament for final approval.
4d. Payments						
4.13 Do invoice processing procedures provide for: · Copies of purchase orders and receiving reports to be obtained directly from issuing departments? · Comparison of invoice quantities, prices and terms with those indicated on the purchase order and with records of goods/services actually received? · Checking the accuracy of calculations?	✓			Invoice processing procedures are sufficient, including: receiving copies of purchase orders and receiving reports directly from issuing departments; comparing invoice quantities, prices and terms with those indicated on the purchase order and with records of goods actually received; and checking the accuracy of calculations (if any).	1	The IP follows the government policies and procedures for invoice processing. In addition, the IP uses computerized system for payment processing which ensures that invoices have been reviewed and approved by the authorized personnel before payment is made. The policies and procedures cover the following areas: • All copies of purchase order, invoice, specification form, delivery receipt require signatories from the requesting unit. • The requestor will ensure that the quantities, prices and terms of goods/services received are matched with those indicated in the PO. • Upon the process of payment, the finance unit will ensure that the calculations on the invoice are correct.
4.14 Are payments authorised at an appropriate level? Does the IP have a table of payment approval thresholds?	✓				1	Yes, all payment transactions of the IP are approved and paid by the treasury department. Nonetheless, before payments can be processed by the treasury department, transaction should have been approved by authorised personnel. The treasury department provided the organisation with table of approval. For transactions up to MYR 10,000, approval of the Chief clerk and deputy accountant will suffice. For transactions above MYR 20,000 but not more than 100,000, the Accountant and Deputy Accountant are the required signatory. For transactions above that, the approval of the Director General and Accountant is required.
4.15 Are all invoices stamped '*PAID*', approved, and marked with the project code and account code?	✓			Invoices are stamped '*PAID*', dated, reviewed and approved, and clearly marked for account code assignment.	1	Yes, vouchers and all supporting documents are stamped "PAID" and approved upon payment.
4.16 Do controls exist for preparation and approval of payroll expenditures? Are payroll changes properly authorized?	✓			Controls exist for the preparation and approval of payroll expenditures and changes are properly authorized.	1	Yes, payroll of the organisation are being monitored by the Human resources department. The organisation uses biometrics to monitor attendance of officers and employees. Changes in the payroll can only be made by the HR department head.
4.17 Do controls exist to ensure that allocation of staff salary costs reflects the actual amount of staff time spent on a project?	✓				1	The IP can use timesheet to ensure that salary cost reflect actual time spent to the project. However, salary cost are currently in the budget of the government and as such, no salary are allocated to other projects.
4.18 Do controls exist for expense categories that do not originate from invoice payments, such as DSAs, travel, and internal cost allocations?	✓			Controls exist for expense categories that do not originate from invoice payments, such as DSA, travel, consultancies.	1	The IP has policies and procedures for processing DSA and travel allowance. Travel reports and mission ordesr are required to be approved by the relevant department head before the transaction can be approved for processing by the finance department.

4e. Policies and procedures						
4.19 Does the IP have a stated basis of accounting (i.e. cash or accrual) and does it allow for compliance with the agency's requirement?	✔			The IP has a single basis of accounting.	1	Yes, the IP follows the modified cash basis of accounting as required by the government. The same has been consistently applied in the past. The IP will be adopting accrual basis of accounting in 2017.
4.20 Does the IP have an adequate policies and procedures manual and is it distributed to relevant staff?	✔			The IP has an adequate policies and procedures manual to guide activities and ensure staff accountability.	1	Yes, the IP ensure that officers have access to policies and procedures manual either through the website of the organisation or through distribution of printed manuals.
4f. Cash and bank						
4.21 Does the IP require dual signatories for bank transactions? How many signatories are on the bank account and how many are required to execute transactions? How are names added/ removed. Provide names.			✔	The IP has signatories on the bank accounts that will be used for United Nations resources and more than one signatory is required for each transaction.	-	All cash and cash payment transactions are handled by the Treasury Department.
4.22 Does the IP maintain an adequate, up-to-date cashbook, recording receipts and payments?			✔	The IP maintains an adequate, up-to-date cashbook, recording receipts and payments.	-	All cash and cash payment transactions are handled by the Treasury Department.
4.23 Are bank balances and cash ledger reconciled monthly and properly approved? Are explanations provided for significant and unusual reconciling items?			✔	Bank balances and cash ledgers are reconciled monthly and properly approved. Significant and unusual reconciling items are explained.	-	All cash and cash payment transactions are handled by the Treasury Department.
4.24 Is substantial expenditure paid in cash? If so, does the IP have adequate controls over cash payments?			✔		-	All cash and cash payment transactions are handled by the Treasury Department.
4.25 Does the IP carry out a regular petty cash reconciliation?			✔		-	All cash and cash payment transactions are handled by the Treasury Department.
4.26 Are cash and checks maintained in a secure location with restricted access? Are bank accounts protected with appropriate remote access controls?			✔	Cash and checks are maintained in a secure location and access has been properly designated and maintained.	-	All cash and cash payment transactions are handled by the Treasury Department.
4g. Safeguards over assets						
4.27 Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?	✔			The IP has a system of adequate safeguards to protect assets from fraud, waste and abuse.	1	The organisation has policies and procedures for asset management that are incorporated on its Asset management system. The system is monitored by the asset management unit.
4.28 Are subsidiary records of fixed assets and inventory kept up to date and reconciled with control accounts?	✔			Subsidiary records of fixed assets and inventory are kept up to date and reconciled with control accounts.	1	Monthly and annual reconciliations are being carried out by the asset management unit.
4.29 Are there periodic physical counts of fixed assets?	✔			The IP performs periodic physical inventories of fixed assets and inventory.	1	The IP is required to carry out annual physical checks of fixed assets on a monthly and annual basis. The physical check is handled by the finance department and asset management unit.
4.30 Are fixed assets and inventory adequately covered by insurance policies?	✔			The IP's fixed assets and inventory are adequately covered by insurance policies.	1	Yes, assets of the organisation are insured by the national government.
4h. Warehousing and inventory management						
4.31 Do warehouse facilities have adequate physical security?	✔				1	The IP deploys security guard for fixed assets. The warehouse is rented by the organisation from third party. These assets are mainly composed of high value equipments to measure pollution in air and water.
4.32 Is inventory stored so that it is identifiable, protected from damage, and countable?	✔				1	The IP uses tags and labels to easily monitor assets. Supplies and inventories are stored in a storage room within the department. These inventories are organised on storage rack and can be easily counted.
4.33 Does the IP have an inventory management system?	✔				1	Inventories are monitored and controlled using computerised inventory management system.
4.34 Is responsibility for receiving and issuing inventory segregated from that for updating the inventory records?	✔				1	The IP has assigned different employees for receiving and issuing of inventory from the officer responsible for records maintenance. In addition, inventories are computerised and thus, records are automatically updated.
4.35 Are regular physical counts of inventory carried out?	✔				2	The accountant general carries out the annual physical check of inventory.

4i. Other offices or entities						
4.36 Do any other offices/ external entities participate in implementation? If so, does the IP have policies and process to ensure appropriate oversight and monitoring of implementation?	✓			If the IP has other offices/entities participating in implementation, there are adequate policies and procedures to ensure appropriate oversight and monitoring of implementation. The IP also has experience with this process.	1	The organisation has 15 state officers all over Malaysia which participate in the implementation of the projects and programmes of the organisation. These state offices are required to report quarterly to the organisation to monitor and review activities of such state activities. These reports will be reviewed by the head of the departments.
4.37 Does the IP maintain contractual agreements with other offices/external entities?			✓	The IP maintains current contractual agreements with other offices/entities.	-	Not applicable. These state offices are part of the organisation as such, no contractual agreements are maintained.
4.38 Does the IP have a process to ensure expenditures of other offices/external entities are in compliance with the work plan and/or contractual agreement?	✓			The IP has a process to ensure expenditures of other offices/entities are in compliance with the work plan and/or contractual agreements.	1	Monthly expenditures are required to be submitted by the state offices to the HQ. The reports will be reviewed by the finance department to ensure that it is in line with the government budget.
4j. Internal audit						
4.39 Is the internal auditor sufficiently independent to make critical assessments? To whom does the internal auditor report?	✓			The internal auditor is sufficiently independent to make critical assessments.	1	The department is subject to audit by the internal auditor from the ministry of natural resources and environment. The internal auditor reports directly to the head of organisation to maintain organisational independence.
4.40 Does the IP have stated qualifications and experience requirements for internal audit department staff?			✓	The IP has stated qualifications and experience requirements for internal audit department staff.	-	The internal auditors are from the ministry of natural resources and environment, and as such, the organisation has no information on their requirements.
4.41 Are the activities financed by the agencies included in the internal audit department's work programme?		✓		The activities financed by agency funds will be included in the internal audit department's work programme.	2	The activities financed by UNDP are audited by the auditor general of Malaysia. However, since the funding is not included in the budget of the government, the activities of the project are not audited by the internal auditor of the Ministry of Natural Resources and Environment.
4.42 Does the IP act on the internal auditor's recommendations?	✓			The internal auditor has policies and procedures to take action on findings identified, if any.	1	Yes, the organisation is required to act within one month after the receipt of such recommendation.
4k. Anti-fraud and corruption						
4.43 Does the IP have an anti-fraud and corruption policy?	✓			The IP has advised employees, beneficiaries and other recipients to whom they should report if they suspect fraud, waste or misuse of agency resources or property.	1	Yes, the IP follows the anti-fraud and corruption policy of the government of Malaysia. The IP is required to establish an integrity unit within the department to receive complains of suspected fraud and corruption.
4.44 Has the IP advised employees, beneficiaries and other recipients to whom they should report if they suspect fraud, waste or misuse of agency resources or property? If so, does the IP have a policy against retaliation relating to such reporting.	✓			The IP has advised employees, beneficiaries and other recipients to whom they should report if they suspect fraud, waste or misuse of agency resources or property.	1	Officers and employees are informed to submit complains of suspected fraud to the integrity unit of the organisation or Head of the department, depending on the level of the officers involved. Investigations are carried out by the integrity unit recommendations will be submitted to the head of the department for review and approval.
Total number of questions in subject area:	44					
Number of questions marked 'N/A' in subject area:	9					
Total number of applicable questions in subject area:	35					
Total number of risk points:					37	
Accounting policies and procedures overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
5. Reporting and Monitoring						
5.1 Does the IP have established project reporting procedures that specify what reports are to be prepared, the frequency of preparation, what they are to contain and how they are to be used?	✔			The IP has established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain and how they are to be used.	1	Yes, as the IP is a unit inside Ministry of Natural Resources and Environment of Malaysia they are bound to follow the monitoring and reporting regulations of the government of Malaysia. These reporting requirements include monthly and quarterly reporting and meetings with the head of the department for progress reporting of the operations.
5.2 Does the IP prepare overall financial statements?	✔				1	Yes, as the IP is a unit inside Ministry of Natural Resources and Environment of Malaysia they are required to prepare annual reports.
5.3 Are the IP's overall financial statements audited regularly by an independent auditor in accordance with appropriate national or international auditing standards? If so, please describe the auditor.	✔			The IP's specific financial statements are audited regularly by an independent auditor.	1	Yes, the annual report of the IP is audited annually by the General Auditor Department of Malaysia based on the Malaysian auditing standards.
5.4 Were there any major issues related to ineligible expenditure involving donor funds reported in the audit reports of the IP over the past three years?		✔		No major accountability issues were brought out in audit reports of the IP over the past three years.	1	There are no major financial issues related to ineligible expenditure involving donor funds noted from the past audit reports.
5.5 Have any significant recommendations made by auditors in the prior three audit reports and/or management letters not yet been implemented?		✔		All recommendations made by the auditor in the prior three audit reports and/or management letters have been implemented.	1	No. from the latest audit report, we found that the IP has implemented the recommendations from the General Auditor and it has been certified by the General Auditor.
Total number of questions in subject area:	5					
Number of questions marked 'N/A' in subject area:	0					
Total number of applicable questions in subject area:	5					
Total number of risk points:					5	
Reporting and monitoring overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
6. Information Systems						
6.1 Is the financial management system computerized?	✓			The financial management system is computerized and properly maintained.	1	As a government agency the IP, is using ESPKB system as mandated by the Ministry of Finance.
6.2 Can the computerized financial management system produce the necessary financial reports?	✓			The computerized financial management system can produce the necessary financial reports.	1	All projects are uniquely referenced which allows to produce a specific report.
6.3 Are IP staff adequately trained to maintain the computerized financial management system?	✓			IP staff are adequately trained to maintain the computerized financial management system.	1	Yes, The IP staff has been trained to be able to utilise the ESPKB system adapted by the organisation.
6.4 Does the IP have appropriate safeguards to ensure the confidentiality, integrity and availability of the financial data? E.g. password access controls; regular data back-up.	✓			The IP has appropriate safeguards to ensure the confidentiality, integrity and availability of the data.	2	The financial database is directly controlled by the Ministry of Finance of Malaysia, thus the Directorate of Environment and Natural Resources' accountant is not aware of frequency of the data back-up. Also, we noted that only accountant has access to the system and it is password-protected.
Total number of questions in subject area:	4					
Number of questions marked 'N/A' in subject area:	0					
Total number of applicable questions in subject area:	4					
Total number of risk points:					5	
Information systems overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

Subject area	Yes	No	N/A	Low risk consideration	Risk points	Remarks/comments
7. Procurement						
7.1 Does the IP have written procurement policies and procedures?	✔			The IP has written procurement policies and procedures.	1	Yes, the IP has written policies and procedures on their procurement activities regulated by the Ministry of Finance. The organisation follows 1PP circular for procurement, accounting and financial activities (treasury order).
7.2 Are exceptions to procedures approved by management and documented ?	✔				1	Any exceptions to the policies and procedures require approval from the Ministry of Finance.
7.3 Does the IP identify the requested authorizations for each value level of purchases? At what value does the IP require written authorization of senior management for a purchase (value in US dollars)?	✔			The IP has defined authorization guidance and policies and procedures to ensure they are properly applied.	1	Yes, the IP has written delegations of authorities in place in terms of approving the purchases. Chief Clerk <10,000 Account Assistant <20,000 Senior Account Assistant <100,000 Accountant & Senior Assistant Director <1,000,000 Deputy Director <5,000,000 Director >5,000,000
7.4 Do the procurement procedures and templates of contracts integrate references to ethical procurement principles and exclusion and ineligibility criteria?	✔			The procurement procedures and templates of contracts integrate references to ethical procurement principles and exclusion and ineligibility criteria.	1	Yes, the organisation has procedures and specific contract templates that integrate references to ethical procurement principles and exclusion and ineligibility criteria. An independent integrity unit is established within the organisation to receive and investigate any complaints of fraud or breach of ethical principles.
7.5 Does the IP obtain sufficient approvals before signing a contract?	✔			The IP obtains sufficient approvals before signing a contract executing a purchase or a payment.	1	Yes, it is required for a contract to be approved by the responsible personnel (mentioned in the contract art. 1949) based on the analysis done by the financial, technical and endorsement committees.
7,6 Does the IP have formal guidelines and procedures in place to assist in identifying, monitoring and dealing with potential conflicts of interest with potential suppliers/procurement agents? If so, how does the IP proceed in cases of conflict of interest?	✔			The IP has formal guidelines and procedures in place to assist in identifying, monitoring and dealing with potential conflict of interests with potential suppliers/procurement agents.	1	Yes. Before and after the procurement process takes place, all the procurement committee members are required to sign a declaration of independence. Any officer or member of the committee who has or is perceived to have conflict of interest is not allowed to participate in the bidding process.
7.7 Does the IP have a well-defined process for sourcing suppliers? Do formal procurement methods include wide broadcasting of procurement opportunities?	✔			The IP has a well-defined process for sourcing/pre-qualifying suppliers.	1	The vendors will have to be registered in the procurement. Yes, the opportunities will be advertised through websites and notice boards and if it is a tender it is advertised nationally through newspapers.
7.8 Does the IP keep track of past performance of suppliers? E.g. database of trusted suppliers.	✔				1	Yes, they have the database of the suppliers and the IP maintain performance reports of the suppliers/ vendors.
7.9 Does the IP have a well-defined process in place to ensure a secure and transparent bid and evaluation process? If so, describe the process.	✔			The IP has a well-defined process in place to ensure a secure and transparent bid and evaluation process.	1	Yes. The procurement committees are divided into three committees (technical, financial and endorsement). The technical committee will examine bids in relation to the best specifications. The financial committee will examine bids in relation to the best price. The endorsement committee will be the one to finalise and authorise the procurement decision. Prior to the procurement process, the personnel involved signs a declaration of independence.
7.10 When a formal invitation to bid has been issued, does the IP award the contract on a pre-defined basis set out in the solicitation documentation taking into account technical responsiveness and price?	✔			The IP awards procurement contracts to qualified bidders whose bids substantially conform to requirements set forth in the solicitation documentation and offer the lowest cost.	1	Yes, only the bidder who meets the technical requirements and offers the lowest price will be chosen as the winning bidder.
Total number of questions in subject area:	10					
Number of questions marked 'N/A' in subject area:	0					
Total number of applicable questions in subject area:	10					
Total number of risk points:					10	
Procurement overall risk assessment:					1	Divide total number of risk points by total number of applicable questions in subject matter section. This amount should be rounded as detailed on page 1 of this checklist and assigned an overall risk rating.

ANNEX F: FACE Form

Funding Authorization and Certificate of Expenditures

UN Agency: XXXXXXXXXX

Date: DD/MM/YYYY

Country: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Programme Code & Title: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Project Code & Title: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Responsible Officer(s): XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Implementing Partner: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Type of Request:
- ☐ Direct Cash Transfer (DCT)
- ☐ Reimbursement
- ☐ Direct Payment

Currency: _____

Activity Description from AWP with Duration	Coding for UNDP, UNFPA and WFP	REPORTING				REQUESTS / AUTHORIZATIONS		
		Authorised Amount MM-MM YYYY A	Actual Project Expenditure B	Expenditures accepted by Agency C	Balance D = A - C	New Request Period & Amount MM-MM YYYY E	Authorised Amount F	Outstanding Authorised Amount G = D + F
XXXXXXXXXXXXXXXXXXXXXXXX (MM/YYYY - MM/YYYY)								
XXXXXXXXXXXXXXXXXXXXXXXX (MM/YYYY - MM/YYYY)								
XXXXXXXXXXXXXXXXXXXXXXXX (MM/YYYY - MM/YYYY)								
Total		0	0	0	0	0	0	0

CERTIFICATION

The undersigned authorized officer of the above-mentioned implementing institution hereby certifies that:

- ☐ The funding request shown above represents estimated expenditures as per AWP and itemized cost estimates attached.
- ☐ The actual expenditures for the period stated herein has been disbursed in accordance with the AWP and request with itemized cost estimates. The detailed accounting documents for those expenditures can be made available for examination, when required, for the period of five years from the date of the provision of funds.

Date Submitted: _____ Name: _____ Title: _____

NOTES: * Shaded areas to be completed by the UN Agency and non-shaded areas to be completed by the counterpart.

FOR AGENCY USE ONLY:

FOR ALL AGENCIES
Approved by:
Name: _____
Title: _____
Date: _____

FOR UNICEF USE ONLY			
Account Charges		Liquidation Information	
Cash Transfer Reference:		DCT Reference:	
CRQ ref. no., Voucher ref. no.		*CRQ ref. no., Liquidation ref. no.*	
GL codes:		DCT Amount	0
Training	0	Less:	
Travel	0	Liquidation Amount	0
Meetings & Conferences	0		
Other Cash Transfers	0	Balance	0
Total	0		

FOR UNFPA USE ONLY	
New Funding Release	
Activity 1	0
Activity 2	0
Total	0

ANNEX G: ANNUAL PROJECT REPORT (APR)

ANNUAL PROGRESS REPORT

Section 1: Overall Implementation of Project Outputs as Per Signed Annual Work Plan for Year....

YEAR XXXX AWP Budget:	Total Project Budget:
YEAR XXXX AWP Budget (Revised):	Total Project Expenditure:
YEAR XXXX Expenditure:	Total Project Expenditure (%):
YEAR XXXX Expenditure (%):	Total In-Kind Contribution:
2016 In-Kind Contribution:	Gender Marker Rating (ATLAS):

OUTPUT 1:
Activity 1:
Target YEAR XXXX:
Achievement and Results YEAR XXXX:
Activity 2:
Target YEAR XXXX:
Achievement and Results YEAR XXXX:
Remarks if any project activities and targets were not implemented or amended.
OUTPUT 2:
Activity 1:
Target YEAR XXXX:
Achievement and Results YEAR XXXX:
Activity 2:
Target YEAR XXXX:
Achievement and Results XXXX:
Remarks if any project activities and targets were not implemented or amended.
OUTPUT 3:
Activity 1:
Target YEAR XXXX:
Achievement and Results YEAR XXXX:
Activity 2:
Target YEAR XXXX:
Achievement and Results YEAR XXXX:
Remarks if any project activities and targets were not implemented or amended.

Section 2: Project Contribution to National Development Agenda in YEAR XXXX

2.1 Contribution to Analysis/ Development/ Refinement of National or Sectoral Policies, Strategies and Action Plans
(Note: Please indicate and elaborate on how the outputs have been utilized by the Implementing Partner to contribute to analysis/ development/ refinement of National or Sectoral Policies, Strategies and Action Plans. Please also indicate if the outputs have contributed to the implementation of the 10th Malaysia Plan or inputs into the 11th Malaysia Plan preparatory work.)

☐ Yes	
☐ No	

2.2 Contribution to awareness raising or convening on key thematic issues
(Note: Please indicate the thematic issues, objective of activities and the number of participants and affiliations.)

☐ Yes	Topic: Objective: Participants Pax: Affiliations (Name the Ministries involved and indicate the number of private sector, civil society organizations and academia who participated):
☐ No	

2.3 Contribution to capacity development and institutional arrangements (Mandatory response)
(Note: Please indicate if capacities are being built to implement or sustain systemic changes.)

☐ Yes	
☐ No	

2.4 Contribution to development of new datasets, statistics or models
(Note: Please indicate if datasets, statistics or models have been generated or improved/ updated. Please also indicate on how these have been utilized by the Implementing Partner to strengthen national evidence based policy making.)

☐ Yes	
☐ No	

2.5 Contribution to Gender Equality
(Note: Please specify aspects of project activities and outputs that have contributed to gender equality. E.g: gender disaggregated data have been produced; activities was gender inclusive; gender analysis of outputs have been generated; outputs have been utilized in state/national/agency policies in gender sensitive ways; and/or stakeholder capacity in collecting, retrieving, and analyzing data with a gender perspective have been supported.)

☐ Yes	
☐ No	

2.6 Demonstration or Pilot Initiative

(Note: Please indicate if demonstration or pilot initiatives were undertaken and how outputs have contributed to inform decision-making and/or national policy and also if it has led to actual/ planned upscaling or replication.)

☐ Yes	
☐ No	

2.7 Review of Risk Analysis and Action

(Note: Upon reviewing the Risk Analysis stated in the Project Document, please indicate if the risks status were monitored and updated regularly. Please also highlight mitigation steps undertaken, if applicable.)

☐ Yes	
☐ No	

2.8 Areas of Improvement for Project Management and Implementation

(Note: Please indicate any additional comments on areas of improvement that should be taken into consideration by EPU and UNDP Malaysia in the implementation of future projects.)

Section 3: Project Extension into YEAR XXXX (if any)

(NOTE: APPLICABLE ONLY TO PROJECTS ORIGINALLY SCHEDULED FOR COMPLETION IN 2016)

Please indicate reasons for the project extension
Proposed duration of project extensions XX Months
Agreement by National Steering Committee: Date of Meeting: Minutes Attached: ☐ Yes ☐ No

Annual Progress Report y approved by:

.....

Name

Designation

ANNEX H: LIST OF ELIGIBE SMEs

Above 20 MTs

Name of Company	Application	MANUAL /MACHINE	machine type: HL/HP	MODEL	CAPACITY/YR	MT(2015)		
WB Refrigeration Sdn Bhd	Panel	machine	1 HP	Cannon A200	200/m; 1997	20	HP	No
Thermofoam Marketing Sdn Bhd	panel	machine	1 lp	OMS C100	100; 2000	22.3	LP	No
Teck Chuan Industrial Sdn Bhd	panel	machine/ manual	1 LP (2 factory sites)	Cannon C100	100/m; 1992	23.09	LP	No
Astino Southern Sdn Bhd *subsidiary of Ooi Joo Kee & Brothers Sdn Bhd	Roofing	machine	2 LP (2 factory)	Taiwan/Q2459	180/min; August 2007 & 2015	23.4	LP (2)	Yes/N
RC&A Refrigeration Parts Supplies S/B (Welmetra Industri S/B)	Panel	machine	1 HP	GMA H200	200/m; 2011	27.5	HP	Yes
Thung Hing Metal Industry Sdn Bhd	Roofing	machine	1 LP	Taiwan	April 2007	29	LP	No
Le Nam Megasheet (M) Sdn Bhd	Roofing	machine	1 LP	Taiwan	30/min; 2009	40.48	LP	No
[redacted]	Thermal/ice Box	machine	2 HP	GMA H40&100	40-2008;100-2011	35.12	HP (2)	Yes
Power Metal Technologies (m) Sdn Bhd	AHU Panel	machine	2 hp	Cannon A40 & OMS Eco100	60 - 2006; 100 - 2012	37.15	HP (2)	No/Y
Ooi Joo Kee & Brothers Sdn Bhd	Roofing	machine	1 LP	Taiwan HJ	0.2M3, 2009	62.92	LP1	No
Asia Roofing Industries Sdn Bhd	Roofing	machine	2 LP (2 factory)	Jason Machine/ LZ22	50 l/m; 2012	76	LP (2)	No

Between 5 – 20 MTs

Name of Company	Application	MANUAL /MACHINE	machine type: HL/HP	MODEL	CAPACITY/YR	MT(2015)			Production commencment date
ALPS Polymer (M) Sdn Bhd	Therma Insulated/ice box	machine	1 HP	Canon HC 40	40 l/m, 2015	5	HP	No	-
Top Amity Sdn Bhd	Panel	machine	1HP & 1 LP	GMA LV100	100; 2004	5.01	HP/LP	No	-
Chong Brothers Coldroom Eng. Sdn Bhd	Panel	machine	1 HP	OMS/ Ecomaster	160/min; 1999	5	HP	No	-
NYC Products Sdn bhd	Floral Hard Foam	machine	1 HP	Cannon A200	150/min; 1997	5.75	HP	No	-
Ngui Soon ColdRoom & Refrigeration Sdn Bhd(Snowfall Ref & coldroom)	Panel & commercial Tryck	machine	1 LP	Saip Se100	100/min; 2005	6	LP	No	-
P.K.T Insulation Trading	panel	machine	1 HP	Elastogran Pu80	90/min; 1995	6	HP	No	-
SJ Classic Industries Sdn Bhd	Roofing	machine	1 LP	Taiwan HT	45g/s; 2013	6.908	LP	Yes	1997
Hi-tech Preinsulated Pipes S/B	Pre-insulated Pipe	machine	1LP	Cannon A100	100/min; 1995	6.11	LP	No	-
CoolMax Refrigeration Industries	Panel	manual	-	-	-	7	M	NA	-
PS Coldroom Panels Supplies	panel	machine	1 hp	OMS Eco 200	200/m; 2002	6.8	HP	No	-
Water-Care Industries Sdn Bhd	Solar Heat Water	machine	1 HP	OMS Eco 100	100; 2000	7.48	HP	No	-
H&C Cleanroom Marketing Sdn Bhd	Panel	manual	-	-	-	7.54	M	-	-
Coolaxis sdn Bhd	Panel & AHU	machine	1 HP	Cannon/ B60	60/m; 2003	7.8	HP	No	-
Power Cool Engineering S/B	Commercial Chiller/Freezer	machine	1 LP	Taiwan 307-500	60min' 2011	8.4	LP	Yes	1996
Pipeco FRP Tanks Sdn Bhd	Panel	manual	-	-	-	8.75	M	-	-
Kom Yt Roofing (M) Sdn Bhd	Roofing	machine	1 LP	Taiwan HT F214	2003	9	LP	Yes	2009

Astino (M) Colour Steel Sheet Sdn Bhd *subsidiary of Ooi Joo Kee & Brothers Sdn Bhd	Roofing	machine	2 LP (2 factory)	1)Taiwan/HJ10307053-1 2) Jaan Sherng FA	120 l/min; 2003	10.12	LP (2)	No	-
Ultimate Panel (M) Sdn Bhd	Panel	machine	2 LP	Taiwan/SAIP SE100	100, 2010	10.25	LP (2)	Yes	2010
Roto Speed Moulding Sdn Bhd	Thermal/ice Box	machine	2 lp	GMA Lv 30& 100	30 -2004; 100- 2012	11.132	LP (2)	No/Yes	-
Insulated Box Manufacturer Sdn Bhd	Commercial Trucks	machine/ manual	1 HP	Cannon A100	100/min; 2002	12	HP	No	-
Hewgant Sdn Bhd	Ice Box	machine	1 HP	OMS/ H40	40/min; 2010	13.01	HP	Yes	1997
Century Refrigeration Enterprise	Panel	machine	1 HP	GMA/ H100	90/min; 2006	14.346	HP	No	-
Alied Foam Insulation Sdn Bhd	Preinsulated Pipe	machine	2 LP	C100/LV100	100l/min; 2008	16	LP (2)	No	-
Gai Hin Refrigeration Sdn Bhd	Panel	machine	2 HP	Cannon A100 & A200	100&200/min; 1999/2001	16.8	HP (2)	No	-
Polytech Insulation Sdn Bhd	Pre insulated Pipe	machine	1 LP	GMA LV 100	100/min; 2009	18	LP	No	2009

Between 1 – 5 MTs

Name of Company	Application	MANUAL /MACHINE	machine type: HL/HP	MODEL	CAPACITY/YR	MT(2015)			Production commencment date
F&C Equipment Sdn Bhd	Panel & commercial Refrigerator	manual	-	-	-	1.1	M	NA	-
O.A.L Enterprise	panel	machine	1 LP	OMS C100	100/min 1998	1.056	LP	No	-
Lian Pang Refrigeration & Electrical S/B	Commercial Chiller/Panel	machine	1 LP	OMS Ecomaster	100/min, 1978	1.2	LP	No	-
Hong Yun Refrigeration	Panel	machine	1 LP	GMA LV100	100/min; 2010	3.125	LP	Yes	2001
Tech-Kool Refrigeration Sdn Bhd	Cold Truck/Panel	0	1 LP	Custom made	20/min; 2008	1.25	LP	No	2001
Manik Prestasi Sdn Bhd	wall panel	machine	1 LP	OMS Ecomaster	200/min; 1996	1.49	LP	No	-
PIP Industries Sdn Bhd	Pre insulated Pipe	machine	1 LP	Cannon A100	135/m; 2008	1.5	LP	No	2008
SolidFoam Industries S/B	Pre-insulated Pipe	machine	1 HP	GMA H100	90/m; 2004	1.485	HP	No	-
Miripoly Industries Sdn Bhd	Insulated box	manual	-	-	-	1.76	M	NA	-
Nobelane Industries Sdn Bhd	Commercial Chiler/Refrigerator	machine	1 HP	Cannon A100	100/min; 1997	2.4	HP	No	-
Welcome Air-Tech (M) Sdn Bhd	AHU Panel	machine	1 LP	China Pourgun	7kg/m; 2005	2.43	LP	No	-
Hai-Point Marketing Sdn Bhd	Roofing	machine	1 LP	Taiwan Chong Ji	2014	2.6	LP	No	-

Syarikat Kejuruteraan Elecktrik FookMei Sdn Bhd	Commercial Chiller/Freezer	manual	-	-		2.59	M	NA	-
Composite Truck Body Sdn Bhd *subsidiary of WB Refrigeration Sdn Bhd	Cold Truck/Panel	machine	1 HP	Canon/A100	100min;1997	3	HP	No	-
Penang Trading Company	panel	machine	1 HP	Cannon A100	90/min; 1998	2.925	HP	No	-
MCE Marketing Sdn Bhd	Panel	Manual	-	-	-	3	M	NA	-
Perniagaan Nam Sing S/B	Commercial Chiller/Refrigerator	machine	1 HP	Cannon A100	90/min; 2002	3	HP	No	-
MSM Equipment Manufacturer Sdn Bhd	Commercial Chiller	machine	1 hp	Cannon Hp	40/min; 2012	3.3	HP	Yes	1994
Dunham-bush Industries Sdn Bhd	AHU Panel	machine	1 HP	Cannon A40	40 /min; 1996	3.21	HP	No	-
Kitchentech Commercial Supply	Commercial Freezer	manual	-	-	-	3.5	M	NA	-
Ocean Parade Industries	Commercial Refrigerator	machine	1 HP	GMA H100	100/min 2006	3.5	HP	No	-
GT Polymer (M) Sdn Bhd	Insulated box	machine	1 LP	SAIP SE60	60/min; 2014	3.61	LP	-	2008
Speed Electrical & Air-Conditioning	Panel	machine	1 HP	OMS Eco 200	200/m, 1998	3.67	HP	No	-
Nature Panel Sdn Bhd	Panel	manual	-	-	-	3.8	M	NA	-

FRIGOTEC Engineering & Refrigeration Sdn Bhd	Cold Truck/Panel	manual	-	-	-	4	M	NA	-
Min Soon Refrigeration Sdn BHd	Panel	manual	-	-	-	4	M	NA	-
PolyUnifoam S/B	Pre insulated Pipe	machine	1 LP	GMA LV100	100/min; 2004	4.025	LP	No	-
KIM Refrigeration Industries Sdn Bhd	Commercial Chiller	machine	1 LP	SAIP SE30	30/min; 2010	4.2	LP	Yes	-
Thermo Cooling Engineering Sdn Bhd	Panel	machine	1 HP & 1LP	China & CannonB100	50- 2013; 100- 2008	4.15	LP	No	-

Below 5MTs

Name of Company	Application	MANUAL /MACHINE	machine type: HL/HP	MODEL	CAPACITY/YR	MT(2015)			Production commencment date
Green Solar Energy Sdn BHd	Solar Heat Water	manual	-	-	-	0.16	M	NA	-
Supreme Kitchen sdn Bhd	Ice Bin	manual	-	-	-	0.18	M	NA	-
BEH Refri geration & Electrical Works Sdn Bhd	Commercial Freezer	machine	1 LP	Canon B100	100/min; 2004	0.25	LP	No	-
Grandcold Refrigerator & commercial Products S/B	Commercial Refrigerator	machine	1 LP	GMA LV100	100/min; 2015	0.25	LP	Yes	1999
Happy Trading	Panel	manual	-	-	-	0.38	M	NA	-
Ban Lee Refrigeration works	Commercial Freezer	machine	1 HP	CanonA100	100/min; 2001	0.05	HP	No	-
Edwincon Engineering & Trading Sdn Bhd	Pre-insulated Pipe	machine	1 HP	Canon A200	200/min, 2001	0.5	HP	No	-
Syarikat Tung kiong Trading	Panel	manual	-	-	-	0.5	M	NA	-
Wincool Refrigeration & Air-cond Sdn Bhd	Commercial Chiller	machine	1 LP	Cannon A60	60/m;2005	0.44	LP	No	-
Teck Guan Steel Sdn Bhd	Roofing	machine	1 LP	Taiwan	6m/min; 2005	0.57	LP	No	-
COOLDEC Industries Sdn Bhd	Roofing	machine	1 LP	Hong Wei Tech/HW Line21/23-457	15m/min; 2001	0.55	LP	No	-
NKR Continental Manufacturing S/B	Commercial Chiller/ Freezer	machine	1 LP	SAIP SE100	100/min, 2006	0.6	LP	No	-

ANNEX I

HCFC Phase-out Management Plan (HPMP) Stage-2 for compliance with the 2016 and 2021control targets for Annex-C, Group-I substances (HCFCs) in Malaysia
(PROJECT NUMBER: **00101950**)

BUDGET YEAR 2017

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
And baseline, associated indicators and annual targets	List activity results and associated actions	Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (USD)
Output 1: Conversion of PU foam sector Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Convert PU foam sector focusing on enterprises with consumption above 5 MT during period 2017-2018 • Convert PU foam sector focusing on enterprises with consumption lesser than 5 MT during 2019 - 2021			x	x	NOU/UNDP	MP	72200-Equipment	751,674
Output 2: Technical Assistance Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022	• Conduct TA workshop for PU foam sector on emerging low-GWP alternatives (total number of 5 workshops) • Conduct one TA workshop for the solvents sector on emerging low-GWP alternatives • Conduct TA workshop for the RAC manufacturing sector on conversion of HCFC-22 to low GWP based alternative				X X x	NOU/UNDP	MP	71300- L/consultant 72200 - Machinery & Equipment 75700 - Workshops	60,000 - -

Related CP Outcome: **Sustainable and resilient development**	technology (total number of 5 workshops, one per year) • Conduct training for customs and enforcement officers on monitoring and controlling of HCFCs (480 trainees) • Conduct technology training on new refrigerants • Conduct training of trainers (five-day program) for 100 trainers • Procure equipment for 21 training institutions, 51 authorized training centres and two centres of excellence.								
Output 3: Project Management Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**						NOU/UNDP	MP	71400-Svc Contract 71600 – Travel 74500 – Miscellanous	20,000 10,000 20,000
								GRAND TOTAL	USD861,674

BUDGET YEAR 2018

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
And baseline, associated indicators and annual targets	List activity results and associated actions	Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (USD)
Output 1: Conversion of PU foam sector Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• - Convert PU foam sector focusing on enterprises with consumption above 5 MT during period 2017-2018 • Convert PU foam sector focusing on enterprises with consumption lesser than 5 MT during 2019 - 2021	X	X	X	X	NOU/UNDP	MP	72200 - Equipment 75700 - Training	1,181,202 125,000
Output 2: Technical Assistance Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Conduct TA workshop for PU foam sector on emerging low-GWP alternatives (total number of 5 workshops) • Conduct one TA workshop for the solvents sector on emerging low-GWP alternatives • Conduct TA workshop for the RAC manufacturing sector on conversion of HCFC-22 to low GWP based alternative technology (total number of 5 workshops, one per year) • Conduct training for customs and enforcement officers on monitoring	X X X X		X	X X X X	NOU/UNDP	MP	71300 - Local Consultant 72200 - Equipment 72100 - Svc Co 75700 - Training	40,000 150,000 99,548 200,000

	and controlling of HCFCs (480 trainees) • Conduct technology training on new refrigerants • Conduct training of trainers (five-day program) for 100 trainers • Procure equipment for 21 training institutions, 51 authorized training centres and two centres of excellence.	X X	X X	X X	X X				
Output 3: Project Management Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**		X	X	X	X	NOU/UNDP	MP	71400 – Svc Contract 71600 – Travel 72100 – Svc Co 74500 – Op expenses/ miscellanous	40,000 25,000 30,750 30,000
								GRAND TOTAL	USD1,921,500

BUDGET YEAR 2019

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
And baseline, associated indicators and annual targets	List activity results and associated actions	Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (USD)
Output 1: Conversion of PU foam sector Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Convert PU foam sector focusing on enterprises with consumption above 5 MT during period 2017-2018 • Convert PU foam sector focusing on enterprises with consumption lesser than 5 MT during 2019 – 2021 • Conversion in PU foam sector above 5 MT completed	X	X	x	x	NOU/UNDP	MP	72200- Equipment	214,764
Output 2: Technical Assistance Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Conduct TA workshop for PU foam sector on emerging low-GWP alternatives (total number of 5 workshops) • Conduct one TA workshop for the solvents sector on emerging low-GWP alternatives • Conduct TA workshop for the RAC manufacturing sector on conversion of HCFC-22 to low GWP based alternative technology (total number of 5 workshops, one per year) • Conduct training for customs and enforcement officers on monitoring and controlling of HCFCs (480 trainees)	X X	 X X	 X X	 X X X	NOU/UNDP	MP	72100 – Svc Contract(Companies) 72200 – Equipment	200,000 200,000

	• Conduct technology training on new refrigerants • Conduct training of trainers (five-day program) for 100 trainers • Procure equipment for 21 training institutions, 51 authorized training centres and two centres of excellence.	X	X		X				
Output 3: Project Management Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**		X	X	X	X	NOU/UNDP	MP	71300 – Local consultant (verification) 71400 – Svc Contract 71600 – Travel 74500 – Op Exp / Miscellanous	15,000 40,000 25,000 30,000
								GRAND TOTAL	USD724,764

AWP 2017 -2019 represents the budgets for the **2016 tranche** in the amount of US$ 3,507,938 released by the ExCom. Subsequent annual tranches under the project will be added with budget revision upon release of each tranche by the ExCom. Total fund approved in principle by the ExCom for Stage II of HPMP of Malaysia is US $ 6,138,063 for period 2017 – 2021.

BUDGET YEAR 2020

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
And baseline, associated indicators and annual targets	List activity results and associated actions	Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (USD)
Output 1: Conversion of PU foam sector Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Convert PU foam sector focusing on enterprises with consumption above 5 MT during period 2017-2018 • Convert PU foam sector focusing on enterprises with consumption lesser than 5 MT during 2019 – 2021 • Conversion in PU foam sector above 5 MT completed	X	X	x	x	NOU/UNDP	MP	72200- Equipment	851,961.50
Output 2: Technical Assistance Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Conduct TA workshop for PU foam sector on emerging low-GWP alternatives (total number of 5 workshops) • Conduct one TA workshop for the solvents sector on emerging low-GWP alternatives • Conduct TA workshop for the RAC manufacturing sector on conversion of HCFC-22 to low GWP based alternative technology (total number of 5 workshops, one per year) • Conduct training for customs and enforcement officers on monitoring and controlling of HCFCs (480 trainees)	X X	 X X	 X X	 X X X	NOU/UNDP	MP	71300 – L/Consultant 72100 – Svc Contract(Companies) 72200 – Equipment 75700 - Training	60,000 60,000 150,000 85,976

	• Conduct technology training on new refrigerants • Conduct training of trainers (five-day program) for 100 trainers • Procure equipment for 21 training institutions, 51 authorized training centres and two centres of excellence.	X	X		X				
Output 3: Project Management Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**		X	X	X	X	NOU/UNDP	MP	71300 – Local consultant (verification) 71400 – Svc Contract 72100 – Svc contract (Companies) 71600 – Travel 74500 – Op Exp / Miscellanous	0 40,000 59,250 25,000 20,000
								GRAND TOTAL	USD1,352,188

BUDGET YEAR 2021

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
And baseline, associated indicators and annual targets	List activity results and associated actions	Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (USD)
Output 1: Conversion of PU foam sector Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Convert PU foam sector focusing on enterprises with consumption above 5 MT during period 2017-2018 • Convert PU foam sector focusing on enterprises with consumption lesser than 5 MT during 2019 – 2021 • Conversion in PU foam sector above 5 MT completed	X	X	x	x	NOU/UNDP	MP	72200-Equipment	851,961.50
Output 2: Technical Assistance Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**	• Conduct TA workshop for PU foam sector on emerging low-GWP alternatives (total number of 5 workshops) • Conduct one TA workshop for the solvents sector on emerging low-GWP alternatives • Conduct TA workshop for the RAC manufacturing sector on conversion of HCFC-22 to low GWP based alternative technology (total number of 5 workshops, one per year) • Conduct training for customs and enforcement officers on monitoring and controlling of HCFCs (480 trainees) • Conduct technology training on new refrigerants	X X X	 X X X	 X X	 X X X	NOU/UNDP	MP	71300 - L/Consultant 72100 – Svc Contract(Companies) 72200 – Equipment 75700 - Training	60,000 60,000 150,000 85,976

	• Conduct training of trainers (five-day program) for 100 trainers • Procure equipment for 21 training institutions, 51 authorized training centres and two centres of excellence.	X							
Output 3: Project Management Baseline: Compliance with post 2015 control targets for Annex-C, Group-I substances Indicators: Reduction of controlled use of Annex C, Group I substances to a sustained level of 294.63 DP tonnes by 1 January 2022 Targets: : Phase out 146.24 ODP tonnes of HCFC in the national HCFC consumption by 1 January 2022 Related CP Outcome: **Sustainable and resilient development**		X	X	X	X	NOU/UNDP	MP	71300 - Local consultant (verification) 71400 - Svc Contract 72100 - Svc contract (Companies) 71600 - Travel 74500 - Op Exp / Miscellanous	15,000 20,000 0 15,000 20,000
								GRAND TOTAL	USD1,277,937.50