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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-first Meeting
Montreal, 18-22 June 2018

PROJECT PROPOSAL: INDONESIA

This document consists of the comments and recommendation of the Secretariat on the following project proposal:

Phase-out

- HCFC phase-out management plan (stage II, second tranche) UNDP and World Bank

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Indonesia

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (stage II)	UNDP (lead), World Bank	76 th	55% by 2023

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	239.79 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2017	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					174.41				174.41
HCFC-123			1.04		1.16				2.20
HCFC-141b		62.70							62.70
HCFC-142b					0.42				0.42
HCFC-225						0.07			0.07

(IV) CONSUMPTION DATA (ODP tonnes)				
2009 - 2010 baseline:		403.9	Starting point for sustained aggregate reductions:	403.9
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)				
Already approved:		219.33	Remaining:	184.59

(V) BUSINESS PLAN		2018	2019	2020	After 2020	Total
UNDP	ODS phase-out (ODP tonnes)	7.65	0	0	10.77	18.42
	Funding (US \$)	806,245	0	0	1,134,613	1,940,858
World Bank	ODS phase-out (ODP tonnes)	13.00	0	0	10.09	23.09
	Funding (US \$)	1,365,907	0	0	1,062,372	2,428,279

(VI) PROJECT DATA			2016	2017	2018	2019	2020	2021	2022	2023	Total
Montreal Protocol consumption limits			363.51	363.51	363.51	363.51	262.54	262.54	262.54	262.54	n/a
Maximum allowable consumption (ODP tonnes)			363.51	363.51	323.12	323.12	252.44	252.44	252.44	181.76	n/a
Agreed funding (US \$)	UNDP	Project costs	2,233,114	0	753,500	0	0	627,086	0	433,300	4,047,000
		Support costs	156,318	0	52,745	0	0	43,896	0	30,331	283,290
	World Bank	Project costs	1,985,743	0	1,276,549	0	0	992,871	0	0	4,255,163
		Support costs	139,002	0	89,358	0	0	69,501	0	0	297,861
Funds approved by ExCom (US \$)	Project costs	4,218,857	0								4,218,857
	Support costs	295,320	0								295,320
Total funds requested for approval at this meeting (US \$)	Project costs			2,030,049							2,030,049
	Support costs			142,103							142,103

Secretariat's recommendation:	For individual consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of Indonesia, UNDP as the lead implementing agency, has submitted a request for funding for the second tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US \$2,172,152, consisting of US \$753,500, plus agency support costs of US \$52,745 for UNDP, and US \$1,276,549, plus agency support costs of US \$89,358 for the World Bank.¹ The submission includes a progress report on the implementation of the first tranche and the tranche implementation plan for 2018 to 2020.

2. At its 80th meeting, the Executive Committee considered the annual progress report on the implementation of the third and final tranche of stage I of the HPMP submitted by UNDP in line with decision 76/47(d).² Although the annual progress report of stage I would be submitted to the 82nd meeting, a summary report on the progress achieved since the 80th meeting has been submitted by UNDP. This report describes activities in the foam manufacturing sector that could have an impact on the implementation of stage II of the HPMP and, therefore, has been included in the present document.

Report on HCFC consumption

3. The Government of Indonesia reported a consumption of 239.79 ODP tonnes of HCFC in 2017. The 2013-2017 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Indonesia (2013-2017 Article 7 data)

HCFC	2013	2014	2015	2016	2017	Baseline
Metric tonnes						
HCFC-22	2,977.1	2,944.2	1,892.9	3,267.5	3,171.0	4,861.9
HCFC-123	100.5	108.8	101.9	123.6	110.0	192.2
HCFC-124	0	0	0	0	0	0.1
HCFC-141b	1,300.0	843.0	420.0	560.0	570.0	1,205.9
HCFC-142b	6.4	4.5	0	10.0	6.41	0
HCFC-225	19.4	12.2	4.6	3.1	1	0.3
Total (mt)	4,403.4	3,912.7	2,419.35	3,964.32	3,858.41	6,260.4
ODP tonnes						
HCFC-22	163.7	161.9	104.11	179.71	174.41	267.4
HCFC-123	2.0	2.2	2.04	2.47	2.20	3.8
HCFC-124	0	0	0	0	0	0
HCFC-141b	143.0	92.7	46.2	61.6	62.70	132.6
HCFC-142b	0.4	0.3	0	0.65	0.42	0.0
HCFC-225	1.4	0.9	0.32	0.22	0.07	0.0
Total (ODP tonnes)	310.52	257.98	152.67	244.66	239.79	403.9

4. The total HCFC consumption in 2016 and 2017 was 39 and 41 per cent below Indonesia's baseline, respectively. Relative to 2015, consumption increased substantially given the economic recovery in the country. Following the ban on the use of HCFC-22 in refrigeration and air-conditioning (RAC) manufacturing and assembly, HCFC-22 is consumed exclusively for servicing, and HCFC-141b consumed exclusively as a foam blowing agent. Consumption of HCFC-123 is for installation and servicing of chillers and in the fire protection sector. Consumption of HCFC-225, which is used for coating syringes and piston rings, has decreased continuously, given the availability of an alternative for syringe coatings; the enterprise still consuming HCFC-225 for piston-ring coating is developing an alternative. HCFC-142b is consumed as a component of R-406A, which was designed as a drop-in replacement for CFC-12-based equipment.

¹ As per the letter of 23 April 2018 from the Ministry of Environment and Forestry of Indonesia to UNDP.

² UNEP/OzL.Pro/ExCom/80/12.

Country programme (CP) implementation report

5. The Government of Indonesia reported HCFC sector consumption data under the 2017 CP implementation report which is consistent with the data reported under Article 7 of the Montreal Protocol.

Report on the implementation of stage I of the HPMP since the 80th meeting

6. The RAC enterprises assisted under stage I had completed their conversion; however, except for one enterprise (PT. Panasonic Indonesia) the other enterprises have not yet been able to manufacture equipment with the HFC-32 (agreed) technology, due to the limited commercial availability of compressors and components, the lack of demand in the local market for HFC-32-based equipment, and the higher cost of HFC-32-based equipment compared to other equipment available in the country. This issue is described in document Status reports and reports on projects with specific reporting requirements submitted to the 81st meeting.³

7. PT. Panasonic Indonesia, had conducted trainings on HFC-32 technology for their technicians and dealers. Other enterprises are expected to follow suit, particularly once the availability to R-32-based compressors and market conditions improve.

8. Of the two systems houses assisted under stage I to introduce cyclopentane and hydrofluoro-olefins (HFOs) polyol systems, one systems house (PT. Sutindo Chemical Indonesia) has completed its conversion, while the other systems house (PT. TSG Chemical, with a funding allocation of US \$301,538 plus agency support costs of US \$22,615 for the World Bank), is considering whether to withdraw from the project. In addition, one small-size foam enterprise (CV. Laksana Teknik Makmur) withdrew from the project, and the funding allocated for its conversion (US \$35,000 plus agency support costs of US \$2,450 for the World Bank), would be returned to the Multilateral Fund.

9. With regard to the servicing sector, to date, more than 14,000 technicians have registered to a web-based application of Refrigerant Monitoring Tool (MAWAS), which includes information on the number of existing technicians, service workshop location, type of services, and refrigerant used.

10. As of March 2018, of the US \$12,692,684 approved for stage I, US \$10,955,939 (86 per cent) had been disbursed (i.e., US \$7,935,320 for UNDP, US \$777,208 for UNIDO, US \$2,035,511 for the World Bank, and US \$191,035 for the Government of Australia).

Progress report on the implementation of the first tranche of stage II

Legal framework

11. The Government prohibited the use of HCFC-22 and HCFC-141b in RAC manufacturing and assembly sectors from 1 January 2015; and removed HFC-32 from the list of highly flammable substances.

Activities in the manufacturing sector

Polyurethane (PU) foam manufacturing sector

12. Under stage II, the national ozone unit (NOU) will provide 213 eligible foam enterprises not covered in stage I with financial incentives for their conversion to cyclopentane blowing agent, and to two system houses to introduce cyclopentane and HFO-based polyol systems, to achieve a complete phase-out of HCFC-141b by 2021. So far, large and mid-size enterprises, as well as one systems house, have signed

³ UNEP/OzL.Pro/ExCom/81/10.

foam technology replacement agreements (FTRA), and conversions are at different stages of implementation as shown in Table 2.

Table 2. Status of enterprises which have signed replacement agreements

Group	Enterprise	2014 HCFC-141b consumption (mt)	Proposed alternative	Project status	Expected date of completion (month/year)
Group 1: Large enterprises	Cahaya Perdana Plastik, PT.	32.835	Cyclopentane	Machine installation in progress	Dec. 2018
	Cahaya Merah Delima, PT.	29.315	Cyclopentane	Machine installation in progress	Dec. 2018
	Dasa Windu Agung, PT.	46.610	Cyclopentane	Machine fabrication in progress	Dec. 2018
	Maspion Plastic and Metal Industry, PT.	39.550	Cyclopentane	Machine installation in progress	Dec. 2018
Group 2: Mid-size enterprises	Ricwil Indonesia, PT.	11.413	Pre-blended cyclopentane	Machine fabrication in progress	Depends on machine delivery date
	Bina Teknik, CV.	15.700	Pre-blended cyclopentane	Machine installation in progress	Dec. 2018
	Tamacool, CV.	5.175	Pre-blended cyclopentane	Machine retrofit in progress	Dec. 2018
	Willich Isolasi Pratama, PT.	8.416	Pre-blended cyclopentane	Machine fabrication in progress	Dec. 2018
System house	Bina Arta, PT.		Cyclopentane and HFO	Machine fabrication in progress	Depends on HFO availability
	MCNS Polyurethane Indonesia PT.		Cyclopentane and HFO	Not yet started	Not yet decided
Total		189.014			

13. In addition, the NOU, the World Bank and a technical consultant conducted visits to four other Group 2 foam enterprises, namely PT. Saka Baja, CV. Duta Teknik, PT. Alsun Suksesindo and PT. Central Mandiri Cemerlang, which are considering whether to retrofit their existing equipment or purchase new equipment.

Activities in the refrigeration servicing sector

14. The project document between the Government of Indonesia and UNDP was signed on 20 December 2017, and the following activities were undertaken:

- (a) The NOU assessed the requirements for equipment needs for RAC training institutions across the country;
- (b) Thirty-two RAC technicians received training on ODS management and ozone layer depletion, and refrigeration systems and their servicing; 27 of those technicians earned a competency certificate from the National Professional Certification Agency (BNSP). Follow-up training on the Montreal Protocol, ODS, new RAC technologies, including HFC-32-based technology, and safety standards also took place;
- (c) The national professional competency standard for refrigerant handling is being updated to reflect technologies available in Indonesia, including HFC-32, and safety standards; and
- (d) Twenty sets of portable refrigerant identifiers with accessories were ordered and, upon delivery, the NOU will distribute these and conduct the necessary training on how to use them.

Project implementation and monitoring unit (PMU)

15. The standard operating procedure of the PMU was updated to take into consideration stage II requirements. For the management of the foam sector, the NOU hired three staff members.

Level of fund disbursement

16. As of May 2018, of the US \$4,218,857 approved so far (US \$2,233,114 for UNDP and US \$1,985,743 for the World Bank), US \$990,737 (23.48 per cent) had been disbursed (US \$76,900 for UNDP and US \$913,837 for the World Bank). The balance of US \$3,228,120 will be disbursed between 2018 and 2021.

Implementation plan for the second tranche of the HPMP

17. The following activities will be implemented over the next three years:

Activities in the manufacturing sector

PU foam manufacturing sector

18. By the end of December 2018, most enterprises in Groups 1 and 2 indicated in Table 2 above are expected to complete their technology conversion, including installation of new machine and destruction of HCFC-based machine. The four remaining Group 2 foam enterprises are expected to sign their FTRA by 2019 and start their conversion processes.

19. Preparation of the voucher system, which will allow small and medium-sized enterprises (SMEs) to purchase low-global warming potential (GWP)-based systems at a reduced price from systems houses, for about 200 SMEs (Group 3) will be initiated in 2018, in cooperation with the Ministry of Finance and the Ministry of National Development Planning, including on the regulations required for disbursement to SMEs and the reporting method. The implementation of the voucher system is planned to start in 2019 and be completed by the end of 2020. As of 1 January 2021, the use and imports of HCFC-141b in pure and pre-blended form will be banned in Indonesia.

20. The systems house PT. Bina Arta will start machine installation in 2018; once the voucher system is established and ready to be implemented, the systems house will be able to supply non-HCFC-141b polyols to its downstream users. It is unclear whether the second systems house, PT. MCNS Polyurethane Indonesia, will continue to be part of the project; the NOU is investigating whether another systems house, PT. Intimas Chemindo, that had originally declined to participate in stage II, now wishes to participate.

Activities in the refrigeration servicing sector

21. The following activities are planned:

- (a) Training to the customs agency to monitor and prevent illegal trade of HCFCs;
- (b) Procurement of equipment for technicians, training institutions, and service workshops to increase the capability of technicians to handle refrigerants to avoid the release of refrigerants, including tools for servicing (e.g., pliers and cutting tools, crimping tools, and refrigerant manifolds), recovery equipment, vacuum pumps, and refrigerant identifiers;

- (c) Capacity-building focused on training of trainers on handling alternative refrigerants; reviewing and updating training materials and curriculum for service technicians to handle new alternative technology; and facilitating RAC technicians and trainers to obtain certification;
- (d) Awareness-raising activities to encourage end-users to use environmentally friendly, low-GWP, non-HCFC technologies in RAC sub-sectors, and to use certified technicians for servicing; and
- (e) Development of regulation for mandatory certification for technicians starting with a voluntary scheme.

PMU

22. The PMU will continue, and the verification of consumption targets will be undertaken.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Verification report

23. Prior to the submission of the tranche request, UNDP informed that while preparation of the verification report was underway, it would not be ready for submission to the 81st meeting. It was therefore agreed that, in line with decision 72/19, funds approved under the second tranche will not be transferred until the Secretariat has reviewed the verification report and confirmed that the Government is in compliance with the Montreal Protocol and its Agreement between with the Executive Committee. In addition, it was agreed that should the verification report not be submitted by 31 July 2018, that funds approved under the second tranche would be returned to the Multilateral Fund and the request for funding for the second tranche of stage II would be resubmitted, together with the verification report, to a future meeting.

Progress report on the implementation of the first tranche of the HPMP

Legal framework

24. The Government of Indonesia has already issued HCFC import quotas for 2018 at 236.38 ODP tonnes, which is lower than the Montreal Protocol control targets.

25. The Secretariat sought a clarification on the establishment of a national system for recording the amounts of HCFC-141b contained in imported pre-blended polyols to support the ban on imports of HCFC-141b in bulk and contained in imported pre-blended polyols by 1 January 2021 as called for under decision 76/38(c). UNDP advised that the Government would need to undertake a study on HCFC-141b contained in imported pre-blended polyols as it is not a controlled substance under any regulation in Indonesia, and as there is only a single harmonized system code for all pre-blended polyols, it would be difficult to obtain reliable data on HCFC-141b contained in imported pre-blended polyol. In mid-2019, the NOU will start preparing regulations to ban the use and imports of HCFC-141b in pure and pre-blended form, after the study on HCFC-141b contained in pre-blended polyols has been completed.

Activities in the manufacturing sector

PU foam manufacturing sector

26. There has been considerable progress in the implementation of the conversions at Groups 1 and 2 foam enterprises, with all enterprises either having already signed their FTRA or having been visited by the NOU, World Bank and a technical consultant. Conversion of the Group 3 enterprises (i.e., SMEs) depends on local systems houses completing their conversion to make available HFO pre-blended systems. The World Bank clarified that HFOs are not yet available at competitive prices in the country; commercial production of HFOs in China is expected to start mid-2019, and the voucher system for Group 3 enterprises is planned to start shortly thereafter.

27. Noting the important role of the systems houses in supplying low-GWP, non-HCFC-141b pre-blended polyol systems to foam enterprises and helping to ensure the successful implementation of the voucher system, the Secretariat considered meaningful that the systems house (PT. Intimas Chemindo) that had initially declined to participate in stage II and now wishes to do so be included as part of the HPMP in case PT. MCNS Polyurethane Indonesia decides to withdraw from the HPMP. UNDP as the lead agency, with the assistance from the World Bank, could further discuss with the PT. TSG Chemical, which was to be assisted under stage I, and PT. MCNS Polyurethane Indonesia if they were still committed to continue their conversions; otherwise, the assistance from the Multilateral Fund would cease and the associated funds would be returned. If PT. MCNS Polyurethane Indonesia decides to withdraw from the project, UNDP and the World Bank could confirm if PT. Intimas Chemindo would be committed to participate in the HPMP and, if so, assess its funding eligibility so that the Executive Committee could consider approving this change of beneficiary enterprise.

Activities in the refrigeration servicing sector

28. Regarding the status of the technician certification scheme, UNDP clarified that the current scheme is voluntary and regulated by the Ministry of Environment. The update to the national professional competency standard is being developed in collaboration with the Ministry of Manpower. Once complete, the certification scheme will be mandatory for all RAC technicians.

PMU

29. In its reporting on the foam sector, the World Bank had indicated that funding for technical assistance and the PMU undertaken for stage II had been allocated to stage I. The Secretariat clarified that funding approved under stage I cannot be used to fund activities approved under stage II, as it would not be in accordance with each of the Agreements for stage I and stage II between the Government and the Executive Committee. Furthermore not separating the different stages in terms of activities and funding could lead to a single project with no clear accountability for expenditures versus activities until after all activities of the overall HPMP are completed. The World Bank clarified that US \$5,278 had been disbursed on technical assistance and US \$11,587 on the PMU, and accordingly corrected the total funds disbursed under the first tranche of stage II to US \$913,837, and that under stage I to US \$2,035,511.

Conclusion

30. With the assistance of UNDP and the World Bank, Indonesia made considerable progress in implementing the first tranche of the stage II of its HPMP. Indonesia's 2017 consumption level was below that specified in the Montreal Protocol and in its Agreement with the Executive Committee. The level of disbursement is 23 per cent. In the foam sector, all Groups 1 and 2 enterprises have either signed their agreement and started implementation of their conversions, or been visited by the NOU, the World Bank and a technical consultant. While participation of two systems houses, one under stage I and one under stage II, is uncertain, there may be an opportunity for an eligible systems house to join stage II,

thereby helping ensure the availability of low-GWP systems to Group 3 enterprises. The training of trainers, procurement of equipment for training institutions, and efforts to update the training curriculum and the national professional competency standard, are likely to further strengthen the servicing sector and help ensure the long-term sustainability of the activities.

RECOMMENDATION

31. The Executive Committee may wish to consider:

- (a) Noting:
 - (i) The progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan of (HPMP) for Indonesia;
 - (ii) The return of US \$35,000 plus agency support costs of US \$2,450 for the World Bank, associated with the withdrawal of the foam enterprise CV. Laksana Teknik Makmur to the 81st meeting;
- (b) To request UNDP as the lead agency, with the assistance from the World Bank:
 - (i) To discuss with the systems houses PT. TSG Chemical Indonesia and PT. MCNS Polyurethane Indonesia, which had been assisted under stages I and II of the HPMP, respectively, whether they were still committed to continue with their conversions; otherwise, the associated funding would be returned to Multilateral Fund at the 82nd meeting;
 - (ii) To confirm if the systems house PT. Intimas Chemindo, that had originally declined to participate in stage II of the HPMP, would be committed to participate and, if so, assess its funding eligibility so that the Executive Committee could consider approving the change of beneficiary enterprise;
 - (iii) To report back to the 82nd meeting on the discussions with the systems houses as described in sub-paragraphs (i) and (ii);
- (c) Approving the second tranche of stage II of the HPMP for Indonesia, and the corresponding 2018-2020 tranche implementation plan, at the amount of US \$2,172,152, consisting of US \$753,500, plus agency support costs of US \$52,745 for UNDP; and US \$1,276,549, plus agency support costs of US \$89,358 for the World Bank, on the understanding that the approved funds would not be transferred to UNDP and the World Bank until the Secretariat had reviewed the verification report for 2016 and 2017 and confirmed that the Government of Indonesia was in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee; and
- (d) Should the verification report for 2016 and 2017 not be submitted by 31 July 2018, the funds approved under the second tranche will be returned to the Multilateral Fund and the request for funding for the second tranche of stage II, together with the verification report, would be resubmitted to a future meeting.