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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-first Meeting
Montreal, 2-6 December 2013

PROJECT PROPOSAL: SOUTH AFRICA

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

Phase-out

- HCFC phase-out management plan (stage I, second tranche) UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

South Africa

(I) PROJECT TITLE	AGENCY
HCFC phase out plan (Stage I)	UNIDO (lead)

(II) LATEST ARTICLE 7 DATA (Annex C Group l)	Year: 2012	461.7 (ODP tonnes)

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)									2012
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab Use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22		1.4		47.3	205.3				254.1
HCFC-123					0.6				0.6
HCFC-124					0.1				0.1
HCFC-141b		175.0							175.0
HCFC-141b in imported pre-blended polyol		32.0							32.0
HCFC-142b		2.5							2.5

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	369.7	Starting point for sustained aggregate reductions:	369.7
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	176.7	Remaining:	193.0

(V) BUSINESS PLAN		2012	2013	2014	2015	2016	2017	2018	Total
UNIDO	ODS phase-out (ODP tonnes)		70.1	0.0	35.2	13.5	0.0	4.8	123.7
	Funding (US $)		2,774,103	0	1,393,498	534,585	0	191,273	4,893,460

(VI) PROJECT DATA			2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Montreal Protocol consumption limits			n/a	369.7	369.7	332.7	332.7	332.7	332.7	332.7	240.3	
Maximum allowable consumption (ODP tonnes)			n/a	369.7	369.7	332.7	332.7	332.7	270.2	270.2	240.3	
Agreed Funding (US$)	UNIDO	Project costs	1,960,229	2,592,620		1,302,335	499,612		178,760			6,533,556
		Support costs	137,216	181,483		91,164	34,973		12,513			457,349
Funds approved by ExCom (US$)		Project Costs	1,960,229	0	0	0	0	0	0			1,960,229
		Support Costs	137,216	0	0	0	0	0	0			137,216
Total funds requested for approval at this meeting (US$)		Project Costs	0	**2,592,620**	0	0	0	0	0			2,592,620
		Support Costs	0	**181,483**	0	0	0	0	0			181,483

Secretariat's recommendation:	For blanket approval

PROJECT DESCRIPTION

1. On behalf of the Government of South Africa UNIDO, as the designated implementing agency, has submitted to the 71st meeting of the Executive Committee a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP)[1] at the amount of US $2,592,620, plus agency support costs of US $181,483. The submission includes a progress report on the implementation of the first tranche of the HPMP, together with the tranche implementation plan for 2014 to 2015.

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

2. During stage I of the HPMP the Government of South Africa is developing legal instruments to control HCFCs, and implementing a foam sector plan[2] to phase out 82.9 ODP tonnes of HCFC-141b, a refrigeration and air-conditioning servicing sector plan to reduce 13.7 ODP tonnes of HCFC-22, and non-investment activities to support the control of HCFC imports and use, with an expected impact of 3.1 ODP tonnes. The results achieved so far are described below.

Additional legal instruments to control the supply and demand of HCFCs

3. An updated draft ODS regulation which incorporates key measures to facilitate HCFC phase-out has been developed and is currently under public consultation for final approval by March 2014. (Table 1)

Table 1: Key regulatory measures included in the updated ODS regulation in South Africa

Measure	Date
Quota system for the assignment of import licenses for all HCFCs	1 January 2013
Ban on imports of HCFC-141b, either pure or as a component of blended chemicals	1 January 2016
Ban on imports of any new or used refrigeration and air-conditioning systems or equipment containing HCFC-22 or any refrigerant or refrigerant blend containing HCFC	1 September 2014
Ban on the use of HCFC-22, either in pure form or as a component of blended refrigerants; in the construction, assembly or installation of any new refrigeration or air-conditioning system or equipment	1 September 2014
Mandatory recovery and recycling of HCFCs and other ODS refrigerants	1 September 2014
License /certification required for purchasing refrigerants	1 January 2015

4. In addition, the tariff code is being modified by the Department of Environmental Affairs (DEA) in coordination with the South African Revenue Service (SARS) and the International Trade Administration Commission of South Africa (ITAC).

Activities in the foam manufacturing sector

5. The conversion in two systems houses to facilitate the production of methyl fomate pre-blended polyols systems is on-going. Resichem is procuring the equipment and Lake Technologies (formerly Industrial Urethanes) finalized technical specifications for the equipment in order to start the procurement process in November 2013. Six downstream users are being converted to methyl formate technology;

[1] The HPMP for South Africa was approved by the Executive Committee at its 67th meeting to meet the 35 per cent reduction by 1 January 2020.

[2] The Government of South Africa also committed to reduce during stage I of its HPMP, 67.2 ODP tonnes of HCFC-141b by self-funded conversions in the foam sector and 32.2 ODP tonnes of HCFC-141b used to produce polyols for exports.

procurement of related equipment and services is underway and the conversion will be completed by end of 2013.

6. The conversion of two large foam manufacturers to hydrocarbon (HC) technology is on-going:

(a) *Defy (domestic refrigerators and freezers):* Defy initiated engineering works and various planning and certification procedures for the storage and use of a flammable blowing agent. Due to the overall scale of the investment (approximately US $8 million) UNIDO has agreed with Defy to enter into a co-financing contract whereby the Fund contribution of US $2,312,948 will be for eligible components of the conversion. UNIDO technical experts have assisted Defy in the preparation of specifications and tender documents. The procurement process will start in November 2013; and

(b) *Aerothane Applications (block foam):* Aerothane is in the process of attaining the necessary fire safety certification to operate with hydrocarbons. Plant layouts and equipment lists were prepared and discussed and equipment procurement will initiate as soon as the certification is received.

Activities in the refrigeration servicing sector

7. The Government of South Africa has undertaken initial engagement activities through stakeholder meetings and publications and is organizing workshops to engage industry, introduce the HCFC-22 reduction strategy, give access to technology experts, and present studies and pilot projects undertaken in South Africa. The Government is also developing an integrated strategy for the refrigeration servicing sector.

Non-investment activity to support control of HCFC import and use

8. The Government developed a customs manual for customs officers. DEA and UNIDO established a database of polyurethane foam producers and held bilateral discussions on the work of the HPMP with a large number of enterprises, providing independent technical support as necessary.

Phase-out of non-eligible consumption

9. In line with decision 67/30, UNIDO reported progress on phasing-out non-eligible HCFC consumption and measures taken to prepare and implement the import and export controls for HCFC-141b and HCFC-based equipment, as follows:

(a) Whirlpool has converted the refrigerant part of its production of domestic refrigerators from HFC-134a to R-600a as of July 2013 and has decided to convert the production of foam panels from HCFC-141b to cyclopentane. Complete conversion is scheduled by July 2015. In the meantime, Whirlpool has expressed its intention to switch to a reduced HCFC-141b system as soon as a workable formulation is determined (trials are currently in progress). While ineligible for HPMP support, Whirlpool could benefit from Government incentives schemes, which are currently being explored, facilitated by UNIDO;

(b) Bumbo is currently using HCFC-141b in manufacturing integral skin foam, but has conducted small scale trials with methyl formate formulation. Further trials have been scheduled for early 2014 to address technical issues with the alternative technology. Bumbo has also completed successful trials with HFA-355mfc, however noting the high-GWP and cost implications, UNIDO has agreed to provide technical advice on potential alternative strategies; and

(c) In addition to the updated regulations summarized in Table 1, DEA and UNIDO have also held several consultations with SARS on the most appropriate approach to implement the import and export for HCFC-141b and HCFC-containing equipment. In March 2014 training will be provided to SARS officers on identification of potential polyols blends.

Status of fund disbursement

10. As of end of September 2013, of the US $1,960,229 approved for the first tranche, US $600,754 (30 per cent) had been disbursed. The balance of US $1,359,475 (70 per cent) will be disbursed in 2014 (Table 2).

Table 2. Financial report of the first tranche of the HPMP for South Africa

Activity	Substance	Impact ODP tonnes	US $			
			Budget	Tranche 1 Budget	Expenditure (Sep 2013)	Balance
Defy	HCFC-141b	31.7	2,312,948	1,347,831	81,602	1,266,229
Aerothane Applications		7.2	185,900	62,393	13,701	48,692
Conversion systems houses and SMEs		44.0	2,247,108	440,000	436,935	3,065
Subtotal foams			**4,745,956**	**1,850,224**	**532,238**	**1,317,986**
Activities in servicing sector	HCFC-22	16.8	1,117,600	110,005	60,673	49,332
Customs training			250,000	0	0	0
Monitoring and Implementation			420,000	0	7,843	-7,843
Subtotal servicing and non-investment			**1,787,600**	**110,005**	**68,516**	**41,489**
Grand Total			**6,533,556**	**1,960,229**	**600,754**	**1,359,475**

Annual plan for the second tranche of the HPMP

11. The main activities to be implemented for the remainder of 2013 and 2014 are described below:

(a) *On legislation:* Train Ozone and Environmental Protection officers to enhance monitoring and enforcement capacity; and address modifications required to tariff codes;

(b) *On the foams sector plan*:

(i) Complete conversion and commissioning of bulk methyl formate pre-blended polyol systems supply at the two systems houses: Resichem and Lake Technologies;

(ii) Complete first downstream-user conversions and use them as case studies to engage small and medium foam enterprises (SMEs) to convert maximising the number of conversions with the available budget; and

(iii) Complete conversion of Defy and Aerothane Applications to cyclopentane technology including commissioning, trials and verification report;

(c) *On the servicing sector:* Develop a full recovery and recycling feasibility study, agree on training curricula, codes of practice and updates to regulations on service practice; implement a small number of demonstration projects on the use of non-ODS, low GWP technologies in different applications; and

(d) *On the non-investment activities:* Train customs officers and environmental inspection officers at major ports and continue to engage stakeholders and the public through all available channels.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Operational licensing system

12. In line with decision 63/17, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the system is capable of ensuring the country's compliance with the Montreal Protocol's HCFC phase-out schedule.

13. The national quota system is jointly established and monitored by the NOU, ITAC and SARS. The NOU is responsible for establishing the import quotas. Quotas are distributed among the enterprises based on market share. The quota for 2013 has been established at 300 ODP tonnes; the quota for 2014 will be established in November 2013.

HCFC consumption

14. The HCFC consumption in South Africa is shown in Table 2.

Table 2. HCFC consumption in South Africa (2007-2012, Article 7)

HCFC	2007	2008	2009	2010	2011	2012	Baseline
Metric tonnes							
HCFC-22	3,849.7	2,833.3	3,632.1	4,035.6	3,293.05	4,619.46	3,833.9
HCFC-123	20.0	33.1	25.6	-	1.0	30.00	12.8
HCFC-124	12.1	15.9	0.4	-62.0	5.0	5.00	-30.8
HCFC-141b	1,295.0	465.8	1,253.9	1,656.1	1,800.82	1,881.20	1,455.0
HCFC-142b	2.2	16.7	14.8	-40.6	0.0		-12.9
TOTAL	**5,179.0**	**3,364.8**	**4,926.8**	**5,589.1**	**5,099.17**	**6,535.66**	**5,258.0**
ODP tonnes							
HCFC-22	211.7	155.8	199.8	222.0	181.12	254.07	210.9
HCFC-123	0.4	0.7	0.5	-	0.02	0.60	0.3
HCFC-124	0.3	0.3	0.0	-1.4	0.11	0.11	-0.7
HCFC-141b	142.5	51.2	137.9	182.2	198.09	206.93	160.1
HCFC-142b	0.1	1.1	1.0	-2.6	0.0		-0.8
TOTAL	**355.0**	**209.2**	**339.2**	**400.1**	**379.26**	**461.71**	**369.7**

15. HCFC consumption reported for 2012 was 461.71 ODP tonnes, which is substantially higher than the established baseline. This is due to an increased demand for HCFCs in the refrigeration sector and the construction sector, which requires air-conditioning systems and panels.

16. The Government also explained that the reported consumption in 2012 was based on permits issued and not on actual amounts imported; therefore the actual consumption could be lower.

Furthermore, due to deficiencies in the customs tariff codes for reporting imports and exports of HCFCs contained in blends, a data correction would be necessary for consumption reported from 2008. The Government of South Africa agreed to submit an official request to the Ozone Secretariat for the revision of reported HCFC consumption by June 2014. In discussions about the matter, UNIDO indicated that it is anticipated that the baseline will be lower.

Other issues discussed

17. The Secretariat and UNIDO discussed issues related to the implementation of the foam projects. Based on a detailed timeline provided by UNIDO with expected dates for achieving major milestones, it was concluded that both systems houses, Resichem and Lake Technologies will be fully converted by December 2013 and March 2014, respectively. Methyl formate pre-blended polyols formulations will be fully developed and HCFC-free production will be initiated during the first half of 2014, and conversion of downstream foam enterprises will take place from the second half of 2014 to mid-2015. Furthermore, Aerothane and Defy will be able to start HCFC-free production by March and July 2014, respectively, resulting in the phase-out of 38.9 ODP tonnes of HCFC-141b.

18. With regard to the refrigeration servicing sector, the discussion focused on how to address the large HCFC consumption in the commercial refrigeration sector (67 per cent of the HCFC-22 demand for servicing) caused by a high level of leakage (estimated 30 per cent of the original charge per year). UNIDO explained that the chosen approach is to improve servicing practices by working with refrigeration associations and the Department of Education, and using existing legislation and national standards[3]. Current work is focusing on determining the standards that are relevant and can be integrated in the legislation, targeting supermarkets, cold storage and refrigerated transport sector, and technicians. The DEA will also work with other Government agencies to enforce existing requirements such as leakage-test requirements and train inspectors to identify refrigerant leakages and to assess records kept by plant owners.

19. With regard to technologies available in the market, UNIDO reported that natural refrigerants (i.e. hydrocarbons, CO_2, and ammonia) are relatively well known in South Africa, but that stakeholder perceptions about safety considerations, power usage, required skills and the cost of capital equipment constitute the main barriers for their use. Each of these barriers needs to be addressed by awareness campaigns at no cost to the industry. Limited trials with latest generation refrigerants such as Honeywell L40, L20 and L13 are also being considered.

Conclusion

20. The HPMP of South Africa is an ambitious plan that will phase out HCFC-141b and reduce overall HCFC consumption by 35 per cent in 2020 plus additional voluntary reductions. The Secretariat notes that although HCFC consumption grew in 2012, the operational HCFC import licensing and quota system will ensure that the level of consumption does not surpass the freeze level. The Government has included a strong regulatory component to the HPMP, which will help the transition. Investment activities in the foam sector have started and will be completed between 2014 and 2015, and systems houses will make low-global warming potential alternatives available for the entire foam sector. The strategy being developed for the refrigeration servicing sector would take advantage of several already existing standards and regulations and target key consuming sectors such as supermarkets; cold storage and refrigerated transport.

[3] For example, the South African National Standard 10147 on refrigeration systems including plants associated with air-conditioning system sets out the skill levels required of those working in plants, mandates, refrigerant recovery and stipulates minimum standards for installations.

RECOMMENDATION

21. The Fund Secretariat recommends that the Executive Committee:

(a) Takes note of the progress report on the implementation of the first tranche of stage I of the HCFC phase-out management plan (HPMP) in South Africa;

(b) Notes that the Government of South Africa had agreed to submit an official request to the Ozone Secretariat for the revision of their reported Article 7 data for the years 2008 onwards by June 2014; and

(c) Requests the Fund Secretariat, once the revised baseline data were known, to update Appendix 2-A to the Agreement to include the figures for maximum allowable consumption, and to notify the Executive Committee of the resulting change in the levels of maximum allowable consumption.

22. The Fund Secretariat further recommends blanket approval of the second tranche of stage I of the HPMP for South Africa, and the corresponding 2014-2015 tranche implementation plan, with associated support costs at the funding level shown in the table below:

	Project Title	Project funding (US $)	Support cost (US $)	Implementing agency
(a)	HCFC phase-out management plan (stage I second tranche)	2,592,620	181,483	UNIDO

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