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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventieth meeting
Bangkok, 1-5 July 2013

PROJECT PROPOSAL: SEYCHELLES

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

Phase-out

- HCFC phase-out management plan (second tranche)

Germany

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Seychelles

(I) PROJECT TITLE	AGENCY
HCFC phase out plan	Germany

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2011	0.93 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2012	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-142b					0.02				0.02
HCFC-22					1.01				1.01

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	1.4	Starting point for sustained aggregate reductions:	1.4
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	1.4	Remaining:	0.0

(V) BUSINESS PLAN		2013	2014	2015	2016	2017	2018	2019	2020-2024	2025	Total
Germany	ODS phase-out (ODP tonnes)	0.37	0	0.41	0	0	0	0	0	0.14	0.92
	Funding (US \$)	180,267	0	202,800	0	0	0	0	0	67,600	450,667

(VI) PROJECT DATA			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020-2024	2025	Total
Montreal Protocol consumption limits			n/a	n/a	1.40	1.40	1.26	1.26	1.26	1.26	1.26	0.91	0.46	n/a
Maximum allowable consumption (ODP tonnes)			1.25	1.25	0.94	0.7	0.53	0.4	0.3	0.3	0.3	0.3	0	n/a
Project costs requested in principle (US \$)	Germany	Project costs	200,000	0	160,000	0	180,000	0	0	0	0	0	60,000	600,000
		Support costs	25,333	0	20,267	0	22,800	0	0	0	0	0	0	7,600
Funds approved by ExCom (US \$)		Project costs	200,000	0	0	0	0	0	0	0	0	0	0	200,000
		Support costs	25,333	0	0	0	0	0	0	0	0	0	0	25,333
Total funding requested at this meeting (US \$)		Project costs	0	0	160,000	0	0	0	0	0	0	0	0	160,000
		Support costs	0	0	20,267	0	0	0	0	0	0	0	0	20,267

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Seychelles, the Government of Germany, as the sole implementing agency, has submitted to the 70th meeting of the Executive Committee a request for funding for the second tranche of the HCFC phase-out management plan (HPMP) at a cost of US \$160,000, plus agency support costs of US \$20,267. The submission includes a progress report on the implementation of the first tranche of the HPMP together with the implementation plan for the period of 2013 to 2015.

Background

2. The HPMP for Seychelles was approved by the Executive Committee at its 63rd meeting, to completely phase out HCFCs by 2025, at a funding level approved in principle of US \$600,000, plus agency support costs of US \$76,000. At its same meeting, the Executive Committee approved the first tranche of the HPMP, at the amount of US \$200,000, plus agency support costs of US \$25,333.

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

3. The Government of Seychelles has developed comprehensive policies and regulations to support the phase-out of HCFCs as well as maximizing climate benefits through reducing the use of HFCs. The licensing and quota system included HCFCs and HCFC-based equipment and is fully operational as of 2013.

4. A module on the Montreal Protocol has been incorporated into the training of newly-recruited customs officers to ensure that all new recruits are trained on the control of ozone depleting substances. During the first tranche, 26 customs officers were trained on implementing the licensing and quota system and on identification of HCFC refrigerants and blends. A module on good refrigeration servicing practices has also been incorporated into the curriculum of Seychelles Institute of Technology (SIT). Certification of refrigeration technicians has been implemented and only those technicians who are assessed and issued with a certificate are permitted to carry out servicing of refrigeration equipment.

5. Seychelles plans to phase out consumption of HCFCs and reduce the use of HFCs at the same time. It has opted for natural hydrocarbon refrigerants as alternative technologies, aiming to use propane (HC-290) for equipment in the residential and commercial air-conditioning (AC) sector. Due to the flammable nature of the alternative refrigerants, extensive training is required to ensure trainers are well prepared and the training centre is suitably equipped to enable it to successfully conduct hands-on training for technicians.

6. During the implementation of the first tranche, training of technicians has been focused on safe handling and working with hydrocarbon refrigerant for split AC unit. One training course by an international expert was conducted and 35 participants attended. Subsequent to training the trainers, two training courses were conducted and 39 technicians were trained on safe use of hydrocarbon refrigerants. Tool kits and equipment for using hydrocarbon refrigerants were provided to SIT for conducting training courses. Six units of hydrocarbon-based split air-conditioners were purchased for training of technicians and demonstration purposes. It is expected that this will encourage importers to introduce refrigerants and equipment based on hydrocarbon. After the training on retrofits, ten units of HCFC-22-based AC units were retrofitted to HC-290.

7. As of April 2013, of the US \$200,000 approved for the first tranche, US \$104,598 had been disbursed. The balance of US \$95,402 will be disbursed together with the funds approved for the second tranche.

Annual plans for the second tranche of the HPMP

8. As the Customs Department has included the HCFC module into the regular training programme for new recruits, training under the HPMP will be reduced to one refresher training each year. This will ensure that customs officers are informed of the latest developments and trained in new skills to deal with the evolving challenges. A laboratory will be established to facilitate the testing and identification of refrigerants and blends.

9. Similar to the training of customs officers, the training of refrigeration technicians has become a self-sustained on-going activity, with the training manual incorporated into the relevant curriculum of SIT and the certification of technicians being implemented. The National Ozone Unit (NOU) will monitor the process and ensure that any new development in the refrigeration and AC sector is communicated to the trainers in SIT. During the second tranche, three training courses are planned for technicians to provide them with updates on the latest skills and technology development in the refrigeration servicing sector. More tool kits and equipment will be provided to SIT and technicians.

10. During the implementation of the second tranche, the Government of Seychelles will promote the use of hydrocarbon refrigerants through government policies and regulations. An incentive programme will be introduced to encourage end-users to convert their HCFC-22-based equipment to hydrocarbon technology. In addition, a pilot project will demonstrate the conversion of the cooling system in a government building currently using HCFC-22-based split AC units to a chiller system running on hydrocarbon and powered by solar energy.

11. The NOU will conduct awareness-raising activities to promote hydrocarbon technology among importers and other industrial stakeholders. Monitoring and evaluation including conducting an annual performance audit, assisting in independent verification (if required), producing annual progress reports and implementation plans, will also be conducted by the NOU.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Operational HCFC licensing system

12. In line with decision 63/17 and as required under the Agreement between the Government of Seychelles and the Executive Committee, confirmation has been received from the Government indicating that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the Government is confident in meeting the Montreal Protocol control targets for HCFC phase-out for the duration of the Agreement. The Secretariat noted that the implementation of the activities in the first tranche has been satisfactory, the quota system is operational and annual quotas are being established from 2013 onwards, and that the system will enable the Government to meet the Montreal Protocol control measures for the phase-out of HCFCs from 2013 onwards.

HCFC consumption

13. The progress report indicated that the estimated imports in 2012 was 1.40 ODP tonnes (25.4 metric tonnes (mt)) of HCFC-22, which exceeded the maximum allowable consumption of 1.25 ODP tonnes set out in row 1.2 of the Agreement by 0.15 ODP tonnes. The Government of Germany advised that the 25.4 mt of HCFC-22 imported into Seychelles in 2012 included the amount of 7.74 mt used for charging refrigeration equipment on foreign flagged ships. This amount will be reported as export under Article 7 of the Montreal Protocol. Therefore, the actual HCFC amount used in the

servicing sector is 0.97 ODP tonnes (17.66 mt) for 2012. This is below the maximum allowable level of consumption of 1.25 ODP tonnes set out in the Agreement for 2012. The total import quota for 2013 has been set at 0.93 ODP tonnes.

14. The Secretariat noted that the HCFC baseline of 1.38 ODP tonnes established at the 63rd meeting was estimated. Now the baseline has been officially established at 1.4 ODP tonnes by the Ozone Secretariat. Therefore the starting point will be adjusted accordingly. The adjustment of the baseline and the starting point will not affect the level of funding approved at the 63rd meeting.

Technical issues

15. The Secretariat noticed that retrofitting of HCFC-22-based equipment to hydrocarbon was set as the main strategy in the HPMP to achieve HCFC reduction targets and queried whether meaningful pre-conditions for retrofitting equipment, including import control of HCFC-22-based equipment, safety standards on flammable refrigerants, market conditions of hydrocarbon refrigerant and skills of technicians in handling flammable refrigerants, have been established.

16. The Government of Germany advised that the Government of Seychelles is working towards establishing these conditions. Although a ban on the import of HCFC equipment has not been in place, the currently implemented licensing and quota system for HCFC-based equipment is able to restrict their import. A ban on HCFC-based equipment is expected to be established in 2015. The Government of Seychelles plans to develop tax policies to regulate the price of refrigerants so as to create a market condition in favour of using hydrocarbon refrigerants. During the training of technicians on retrofits to hydrocarbon, European Union (EU) standards on flammable refrigerants were followed. The Government of Seychelles is considering developing safety standards and codes for flammable refrigerants on the basis of EU standards. As to the market condition, currently the price of HCFC-22 in Seychelles is approximately US \$14-18/kg while the price of refrigerant grade propane (HC-290) is estimated at US \$22/kg. Taking into account the fact that the charge weight of HC-290 for identical refrigeration systems is usually 40 per cent to 50 per cent less than that of HCFC-22, the use of hydrocarbon refrigerant seems more economically favourable to end-users. The price of HCFC-22 and R-290 could be further regulated through tax policy, which may attract more end-users to adopt this environmentally favourable refrigerant. Continuous training and certification of technicians will build their capacity in servicing hydrocarbon-based equipment and foster confidence among end-users and importers in adopting this new alternative.

17. The Secretariat further noticed that Seychelles had opted for accelerated phase-out and the reduction set out in the Agreement is 40 per cent of the baseline for the period of 2013 to 2016. Given that 70 per cent of the total consumption is in the residential and commercial AC sector, which normally has a small refrigerant charge of less than 1.5 kg/unit, in order to achieve the required reduction a large quantity of units would need to be retrofitted or replaced. The Secretariat asked the Government of Germany how this reduction will be realized with the limited funding in the HPMP.

18. The Government of Germany advised that an end-user incentive programme will be introduced in the second tranche to motivate hotels to retrofit their split AC units to hydrocarbon. For the commercial refrigeration sector, which counts for 28 per cent of the total consumption, refrigerant recovery and reuse will be implemented until suitable technology emerges in the future. A demonstration project using hydrocarbon chillers combined with solar energy will be conducted in a government building which currently uses individual split AC units. This is a sufficiently mature technology in Europe but has not been applied in an Article 5 country. It is expected that data and experience will be obtained through the demonstration project. If it is successful, this technology will be applied to similar buildings in Seychelles. It further stressed that the awareness-raising programme and stakeholder consultation workshops will create an enabling environment for introducing hydrocarbon refrigerants. Stakeholders in the tourist industry, including hotels, are urged towards the change as this will enhance their

environmental-friendly image to attract tourists from Europe. The Government of Germany further stressed that the Government of Seychelles and the refrigeration industry is highly committed to HCFC phase-out and achieving carbon neutrality. On the basis of regulations support and a quota system to be strictly followed, the Government is confident of meeting the accelerated phase-out schedule set in the HPMP. The Secretariat takes into account the situation in the country and feels that the activities proposed in the implementation plans of the second tranche are meaningful and implementable.

Revision to the Agreement of the HPMP

19. The HPMP for Seychelles was approved prior to the establishment of the HCFC baseline for compliance. Accordingly, in approving the HPMP, the Executive Committee requested the Secretariat to, *inter alia*, update Appendix 2-A (“The targets, and funding”) to the Agreement with the figures for the maximum allowable consumption, and to notify the Committee of the resulting levels accordingly (decision 63/48(e)). Based on the data reported by the Government of Seychelles under Article 7 and its revised phase-out schedule, the relevant paragraphs of the Agreement have been updated, and a new paragraph has been added to indicate that the updated Agreement supersedes the original one reached at the 63rd meeting, as shown in Annex I to this document. The full revised Agreement will be appended to the final report of the 70th meeting.

RECOMMENDATION

20. The Fund Secretariat recommends that the Executive Committee:

- (a) Takes note of the progress report on the implementation of the first tranche of the HCFC phase-out management plan (HPMP) for Seychelles;
- (b) Notes that the Fund Secretariat had updated paragraph 1, Appendices 1-A and 2-A of the Agreement between the Government of Seychelles and the Executive Committee, based on the established HCFC baseline for compliance, and that a new paragraph 16 had been added to indicate that the updated Agreement superseded that reached at the 63rd meeting, as contained in Annex I to the present document; and
- (c) Further notes that the revised starting point for sustained aggregate reduction in HCFC consumption was 1.4 ODP tonnes, calculated using consumption of 1.4 ODP tonnes and 1.3 ODP tonnes reported for 2009 and 2010, respectively, under Article 7 of the Montreal Protocol.

21. The Fund Secretariat further recommends blanket approval of the second tranche of the HPMP for Seychelles, and the corresponding 2013 to 2015 tranche implementation plan, with the 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 (second tranche)	160,000	20,267	Germany

Annex I

TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT BETWEEN THE GOVERNMENT OF SEYCHELLES AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS

(Relevant changes are in bold font for ease of reference)

1. This Agreement represents the understanding of the Government of Seychelles (the “Country”) and the Executive Committee with respect to the reduction of controlled use of the ozone depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to a sustained level of zero ODP tonnes prior to 1 January 2025 in compliance with Montreal Protocol schedules.

16. This updated Agreement supersedes the Agreement reached between the Government of Seychelles and the Executive Committee at the 63rd meeting of the Executive Committee.

APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	1.38
HCFC-141b	C	I	0.02
Total	C	I	1.40

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020-2024	2025	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)			1.4	1.4	1.26	1.26	1.26	1.26	1.26	0.91	0.46	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	1.25	1.25	0.94	0.70	0.53	0.40	0.30	0.30	0.30	0.30	0.00	n/a
2.1	Lead IA Germany agreed funding (US \$)	200,000		160,000		180,000						60,000	600,000
2.2	Support costs for Lead IA (US \$)	25,333		20,267		22,800						7,600	76,000
3.1	Total agreed funding (US \$)	200,000		160,000		180,000						60,000	600,000
3.2	Total support cost (US \$)	25,333		20,267		22,800						7,600	76,000
3.3	Total agreed costs (US \$)	225,333		180,267		202,800						67,600	676,000
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)												1.38
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)												0
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)												0
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)												0.02
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)												0
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)												0
