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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Sixty-third Meeting  
Montreal, 4-8 April 2011

**PROJECT PROPOSAL: BHUTAN**

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

Phase-out

- HCFC phase-out management plan (first tranche)

UNEP/UNDP

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

## Bhutan

<b>(I) PROJECT TITLE</b>	<b>AGENCY</b>
HCFC Phase Out Management Plan	UNDP, UNEP (lead)

<b>(II) LATEST ARTICLE 7 DATA</b>	Year: 2009	0.3 (ODP tonnes)
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<b>(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)</b>								<b>Year: 2009</b>			
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab Use	Total sector consumption		
				Manufacturing	Servicing						
HCFC123											
HCFC124											
HCFC141b											
HCFC142b											
HCFC22					0.3				0.3		

<b>(IV) CONSUMPTION DATA (ODP tonnes)</b>			
2009 - 2010 baseline (estimate):	0.31	Starting point for sustained aggregate reductions:	0.31
<b>CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)</b>			
Already approved:	0.0	Remaining:	0

<b>(V) BUSINESS PLAN</b>		<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
UNDP	ODS phase-out (ODP tonnes)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Funding (US \$)	45,682	0	0	45,682	0	0	45,682	0	0	0	137,047
UNEP	ODS phase-out (ODP tonnes)	0.1			0.1			0.1				0.2
	Funding (US \$)	127,904			127,904			127,904				383,713

<b>(VI) PROJECT DATA</b>		<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
Montreal Protocol consumption limits (estimate)		0.31	0.31	0.31	0.31	0.28	0.28	0.28	0.28	0.28	0.20	0.11
Maximum allowable consumption (ODP tonnes)		0.31	0.31	0.28	0.28	0.25	0.25	0.2	0.2	0.1	0	0.301
Project Costs requested in principle (US\$)	UNEP	Project costs	100,000		70,000		82,000				30,000	282,000
		Support costs	13,000		9,100		10,660				3,900	36,660
	UNDP	Project costs	70,000		42,000		57,000				19,000	188,000
		Support costs	6,300		3,780		5,130				1,710	16,920
Total project costs requested in principle (US \$)		170,000		112,000		139,000					49,000	470,000
Total support costs requested in principle (US \$)		19,300		12,880		15,790					5,610	53,580
Total funds requested in principle (US \$)		189,300		124,880		154,790					54,610	523,580

<b>(VII) Request for funding for the first tranche (2011)</b>		
<b>Agency</b>	<b>Funds requested (US \$)</b>	<b>Support costs (US \$)</b>
UNEP	100,000	13,000
UNDP	70,000	6,300

<b>Funding request:</b>	Approval of funding for the first tranche (2011) as indicated above
<b>Secretariat's recommendation:</b>	Individual consideration

## **PROJECT DESCRIPTION**

1. At the 62<sup>nd</sup> Meeting, UNEP, as the lead implementing agency submitted the HCFC phase-out management plan (HPMP) for Bhutan for the complete phase-out of its HCFC consumption by 2020 with a service tail until 2025. The total cost of the HPMP as presented was US \$832,285 (excluding agencies support costs) and would be implemented jointly with UNDP. The cost of the institutional strengthening (IS) project for the period 2012-2020 of US \$270,000 was included in the total HPMP funding requested in line with decision 59/17.
2. After discussion of the HPMP at the 62<sup>nd</sup> Meeting, the Executive Committee, in decision 62/52 decided to defer the consideration of the HPMP to the 63<sup>rd</sup> Meeting. In the discussions preceding this decision, the Executive Committee had noted that while Bhutan had provided a high-level commitment in writing to the 62<sup>nd</sup> meeting to support its request for funds to accelerate the phase-out of HCFCs earlier than the Montreal Protocol schedule, it was the Committee's view that this could be further elaborated as an action plan and requested that the action plan be submitted to the 63<sup>rd</sup> Meeting.
3. On behalf of the Government of Bhutan UNEP, as the lead implementing agency, has submitted to the 63<sup>rd</sup> Meeting of the Executive Committee further documentation to support the country's strong national commitment for requesting accelerated HCFC phase-out earlier than Montreal Protocol schedule in line with decision 60/15 and 62/52. The HPMP that was considered at the 62<sup>nd</sup> Meeting is the basis for this submission.
4. As originally submitted, UNEP is requesting US \$303,685 plus agency support cost of US \$39,479 and US \$134,948 plus agency support cost of US \$12,145 for UNDP for the first tranche of the HPMP.

### Scope of the document

5. This document is an update of documents UNEP/OzL.Pro/ExCom/62/22 and Add.1 submitted to the 62<sup>nd</sup> Meeting based on additional information submitted by UNEP. To facilitate the review of the HPMP for Bhutan and the new information provided, this document presents an overview of the HPMP itself, followed by a description of the action plan. The section on comments and recommendations has also been revised accordingly.

### **Section 1: HPMP Document**

#### **Background**

##### ODS regulations

6. The National Environment Commission (NEC) has been appointed by the Royal Government of Bhutan as the focal agency responsible for implementing the provisions under the Vienna Convention and the Montreal Protocol on Substances that Deplete the Ozone Layer.
7. ODS regulations were first developed in 2005 and later revised in 2008 to include the HCFC accelerated phase-out schedule and strengthen penalties. The scope of the legislation extends to all ODS, products containing or made with ODS, and ODS-using equipment controlled by the Montreal Protocol. It clearly outlines the role of the National Ozone Unit and the National Ozone Committee in the management of the Ozone issues. These regulations also control the import and export of restricted HCFCs into and out of the country, ban the import and export of other ODS such as CFCs, and put in place monitoring requirements. No import bans on HCFC containing equipment are currently in place in the country.

HCFC consumption

8. All HCFCs imported into Bhutan are primarily from India, though equipment containing ODS are also imported from other countries such as Thailand, China and others in the region. Only HCFC-22 is used in the country predominantly in the air conditioning and refrigeration servicing sector. This is expected to grow due to the general economic growth resulting in more industries, increased handling of chilled and frozen food and increased demand from the growing number of international standard hotels and resorts, etc. for refrigeration systems. The use of HCFCs for domestic household purposes has also increased due to the warmer summers and availability of affordable equipment in the market.

9. The annual consumption of HCFCs during the 2005-2009 period was roughly estimated at an average of 3.8 metric tonnes (mt) (0.21 ODP tonnes) per year based on the survey undertaken for the HPMP preparation. Table 1 shows the 2005-2009 level of HCFC consumption in Bhutan, comparing the reported consumption under Article 7 and the results gathered from the HCFC survey.

Table 1: HCFC level of consumption in Bhutan

Year	Article 7		Survey results	
	HCFC-22 (in metric tonnes)	HCFC-22 (ODP tonnes)	HCFC-22 (in metric tonnes)	HCFC-22 (ODP tonnes)
2005	0	0	3.28	0.18
2006	0	0	2.75	0.151
2007	1.81	0.1	3.65	0.201
2008	1.81	0.1	3.67	0.202
2009	5.45	0.3	5.61	0.308

10. The installed capacity of refrigeration and air conditioning units in the country using HCFC-22 was estimated at 1,888 units in 2009 as shown in Table 2.

Table 2: Distribution of HCFC-22 in refrigeration systems

Type	Total units	Total charge (tonnes)		Servicing (tonnes)	
		Metric	ODP	Metric	ODP
Residential air conditioning	1,200	2.04	0.11	0.612	0.314
Commercial/air conditioning	688	17.03	0.93	4.9	0.27
Total	1,888	19.07	1.04	5.5	0.30

11. HCFC consumption in Bhutan is expected to grow until the freeze in 2013. The methodology used for determining the forecast growth was the linear trend using as a basis the data collected from the survey rather than Article 7. The government indicated that these figures more realistically reflected the actual consumption in the country as it takes into account the servicing requirements of currently installed equipment, and not just import data. The table below provides a summary of this forecast.

Table 3: Forecast consumption of HCFC in Bhutan

		2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Projected consumption</b>	<b>MT</b>	2.67	3.23	3.75	4.35	4.91	5.47	6.03	6.58	7.14
	<b>ODP</b>	0.15	0.18	0.21	0.24	0.27	0.30	0.33	0.36	0.39
<b>Actual consumption (survey)</b>	<b>MT</b>	3.28	2.755	3.65	3.67	5.61				
	<b>ODP</b>	0.18	0.15	0.20	0.20	0.31				

HCFC phase-out strategy

12. The Government of Bhutan is proposing a single stage approach to achieve the complete phase-out of HCFCs by 2020, with a service tail of 2.5 per cent of the baseline annually until 2025. The plan will be to impose an import ban on HCFC based equipment by 2013. The decision to phase out HCFCs by 2020 is based on the country's commitment to meet challenges for both ozone protection and climate at the same time. The government had provided its commitment to this accelerated phase-out in a written communication to the Multilateral Fund Secretariat. The phase-out plan is presented in the table below:

Table 4: Proposed HCFC phase-out schedule of Bhutan

Schedule	Bhutan Reduction Targets
Average 2009-2010	Baseline level
1 January 2012	Freeze at baseline
1 January, 2013	10 % below baseline
1 January 2015	20% below baseline
1 January, 2017	35% below baseline
1 January, 2019	67.5% below baseline
1 January, 2020	100% phase-out *average of 2.5% for service tail up to 2025

13. To achieve the targets set in the above schedule, Bhutan will follow a three-pronged approach for HCFC phase-out addressing three strategic elements crucial to the successful phase-out of HCFCs in the country, namely, limit the supply of HCFCs, reduce the demand for HCFCs in servicing existing equipment, and limit new demand. This three-pronged approach aims to reduce the dependence on HCFCs until the final phase-out in 2020. The implementation plan includes measures using a combination of regulations and enforcement instruments, training and capacity building, information exchange and advocacy programmes, and project initiatives. The early HCFC phase-out targets of Bhutan will be a challenge that the country has committed itself to. Partnerships with industry and government and other relevant stakeholders have been put in place in order to meet these targets.

14. The HPMP also envisages a technical assistance component that will be provided to the servicing sector. Under this programme, 4 small reclaim centres for recovery and recycling of HCFCs will be established, and are proposed to be operated by trained service technicians. These centres would also record, track and report on incoming and outgoing refrigerants. Thirty sets of recovery tools will also be provided to technicians, and training will be conducted on the use of such equipment. The key concept underlying this mechanism is to acknowledge and harness market forces to ensure commercial viability and sustainability and also to ensure ownership of the servicing establishments.

15. The end-user retrofit pilot incentive programme will provide retrofit kits to 70 beneficiaries and include incentives for large end-users to retrofit their HCFC-based equipment to non-HCFC alternatives, on a pilot basis. Incentive funding would be provided to the servicing establishments upon submission of evidence that the retrofits were adequately and satisfactorily carried out. It is expected that upon completion of this activity, demonstration cases of successful retrofitting of HCFC-based refrigeration and air conditioning systems will build confidence among other end-users, so precipitating early retrofitting decisions and reducing demand for HCFCs.

16. The cost of the institutional strengthening project is also included in the HPMP. In the HPMP, the IS funds will be used for overall programme management and monitoring for which no funds have been allocated in the overall budget.

Table 5: Specific activities of the HPMP and proposed period of implementation

<b>Activity</b>	<b>Implementation stage</b>
HCFC phase-out policies and enforcement for Policy review and enforcement and training of customs officers	Overall plan (2011-2020)
Information exchange and advocacy programme	Overall plan (2011-2020)
Refrigeration service technician training and certification programme	Overall plan (2011-2016)
Promotion of ozone climate co-benefit activities* <ul style="list-style-type: none"> <li>• Standards and Labelling Programme (SLP),</li> <li>• Framework for Efficient and Low HCFC Economic Development (FELHED)</li> </ul>	Overall plan* (2010-2020)
Technical assistance for the refrigeration servicing sector: <ul style="list-style-type: none"> <li>• Reclaim programme</li> <li>• End-user retrofit/ replacement pilot incentive programme</li> </ul>	Overall plan (2011-2015)
Institutional strengthening	Overall plan (2012-2020)

\*To be funded through sources outside the Multilateral Fund

17. The Government of Bhutan has developed an approach to integrate ozone and climate benefits by including project components for the development and implementation of energy efficiency standards and labelling programme, as well as promotion of market based instruments for the accelerated replacement of ODS equipment. These project components are fully integrated into the HPMP but will be implemented without the assistance from the Multilateral Fund showing an innovative way of using co-financing opportunities. The Government of Bhutan has also pledged some contribution for these components. UNEP indicated that out of the US \$97,000 allocated for these components, the Government of Bhutan will provide US \$7,000 while the rest is still to be sourced from other funding sources.

#### Cost of the HPMP

18. The total overall cost of the HPMP for Bhutan has been estimated at US \$832,285, as submitted, to achieve the complete phase-out of 5.6 mt (0.30 ODP tonnes) of HCFCs by 2020 with a 2.5 per cent service tail until 2025 including the cost of the IS project, as shown below.

Table 6: Total cost of the HPMP for Bhutan

Description of activities	UNEP	UNDP	Total (US \$)
HCFC phase-out policies and enforcement <ul style="list-style-type: none"> <li>• Customs training</li> <li>• Border dialogues</li> </ul>	126,000		126,000
Information exchange and advocacy programme <ul style="list-style-type: none"> <li>• Training for officers of customs and other law enforcement departments</li> <li>• Travel cost for trainees</li> </ul>	83,000		83,000
Servicing technician training and certification programme	128,371		128,371
Standards and labelling programme	37,000**		37,000**
Framework for Economic Efficient and Low HCFC Economic Development (FELHED)	53,000**		53,000**
Technical assistance for the refrigeration servicing sector <ul style="list-style-type: none"> <li>• Reclaim programme</li> <li>• End-user retrofit/ replacement pilot incentive programme</li> </ul>		224,914	224,914
Institutional strengthening (2012-2020)	270,000		270,000
Sub-total	697,371	224,914	922,285
<b>Total amount requested for funding</b>	<b>607,371</b>	<b>224,914</b>	<b>832,285</b>

\*\*no cost to the Multilateral Fund, to be co-financed

## Section 2: Action plan in response to decision 62/52 and to support the strong national commitment for accelerated phase-out required in decision 60/15

### Description

19. UNEP, in response to decision 62/52, submitted for the consideration of the 63<sup>rd</sup> Meeting of the Executive Committee a detailed action plan mainstreaming the accelerated HPMP with the national policy of Bhutan to maintain the carbon negative and carbon neutral status of the country. This submission is a demonstration of the Government's strong national commitment to ensure that the phase-out of HCFCs is completed ahead of the schedule under the Montreal Protocol as required by decision 60/15. The action plan is attached as Annex I to this document.

20. The document provides information on the legal and constitutional background by which the country manages the environment, where the protection of the ozone layer and issues related to climate change are important components. Bhutan has very minimal greenhouse gas (GHG) emissions as compared to the country's function as a carbon sink, according to its national communication to the United Nations Framework Convention on Climate Change (UNFCCC). Maintaining this position is an important objective for the Government of Bhutan, and this is supported by regulatory measures including mitigating GHG emissions in the industrial sector and mainstreaming the HCFC phase-out into national policy and the national institutional framework. This is one of the underlying reasons why the Government deems it important that HCFCs be phased out faster than the Montreal Protocol targets. It seeks to target one of the fastest growing sources of GHG emissions, namely the refrigeration and air conditioning (RAC) sector, where if phased out faster, will contribute positively to meeting these objectives.

21. The Government has submitted an action plan in support of its commitment to accelerate HCFC phase-out by 10 years. The action plan seeks to achieve the commitment of carbon neutrality and carbon negativity that has already been announced through:

- (a) Ensuring that the implementation of the HPMP would result in additional GHG mitigation of 9.5 per cent of the annual emissions of 1.5 million tonnes of CO<sub>2</sub>-equivalent.
- (b) Being the first step as part of the comprehensive strategy unveiled for preserving the unique status of Bhutan in terms of being a large carbon sink.

22. The submitted plan lists a number of regulatory and policy measures including timelines that describe the specific actions that the country will take to support the proposed accelerated phase-out, which includes stronger restrictions on import/export controls on HCFCs and HCFC based-equipment along with labelling of HCFCs containers, establishing a quota by 2011, introducing new environment tax to be levied on equipment using HCFCs to discourage their use, among others. The Government is also committed to the strict implementation of the activities identified in the HPMP that will establish an institutional framework for a robust legal, regulatory and policy framework to create and sustain market based initiatives to promote energy efficiency for RAC equipment, including the framework for strengthened standards and a labelling programme. It also includes actions that will be taken up through bilateral cooperation/agreement with India and China, the two closest neighbours who are both producers of HCFCs to ensure their support in meeting Bhutan's objectives to phase-out HCFCs by 2020 by encouraging a "no export" ban by 2020 or earlier.

## **SECRETARIAT'S COMMENTS AND RECOMMENDATION**

### **COMMENTS**

23. The Secretariat reviewed the HPMP for Bhutan in the context of the guidelines for the preparation of HPMPs (decision 54/39), the criteria for funding HCFC phase-out in the consumption sector agreed at the 60<sup>th</sup> Meeting (decision 60/44), subsequent decisions on HPMPs made at the 62<sup>nd</sup> Meeting and the 2011-2014 business plan of the Multilateral Fund.

#### Issues related to HCFC consumption

24. UNEP provided an explanation for the increase in the consumption of HCFCs between 2008 and 2009. It indicated that previous reports did not correctly reflect the situation in the country as there were difficulties associated with data collection. The current methodology has allowed the determination of a better estimate of consumption using the population of installed equipment and comparing this with customs data, based on which the 2009 data showed quite an increase from 2008. UNEP also explained that recent economic development in the country has opened up a number of areas for tourist purposes thereby needing new hotels and facilities that required the use of HCFC-22 equipment.

#### Calculation of estimated baseline

25. The Government of Bhutan agreed to establish as its starting point for sustained aggregate reduction in HCFC consumption the level of consumption in 2009, which has been reported as 0.31 ODP tonnes under Article 7 of the Montreal Protocol. The business plan indicated a baseline of 0.3 ODP tonnes.

### Technical and cost issues

26. The Secretariat raised some issues regarding the changes in the legal framework for the management of HCFCs vis-à-vis funding already provided for policy development during HPMP preparation. UNEP indicated that the country already has an ODS licensing system, and during this implementation period will establish import quotas to monitor HCFC imports, ban imports of HCFC-containing equipment and increase the capacity of the enforcement authorities to facilitate the efficient implementation of these ODS policies. These will be effective in 2013.

27. The HPMP foresees activities in the servicing sector such as training, certification of technicians and enhanced awareness raising to be the main non-investment activities as well as the recovery and recycling programme that is required by the country to meet compliance with its targets. The investment components are designed to be sustainable by providing assistance that would allow recovery centres to operate for instance on a commercial basis as described in paragraph 11 and 12. The pilot retrofit programme builds upon lessons learned in the TPMP and will target the larger end-users in order to achieve a specific reduction in HCFCs once the end-user is converted. According to UNEP, it is important that these investment components be completed during the first years of implementation if they are to support the full phase-out, and foresees an implementation timeframe of 2010-2015.

28. The Secretariat also discussed with UNEP the action plan submitted to demonstrate the country's national commitment to phase out HCFCs faster than the Montreal Protocol schedule. It sought clarification on how the HPMP would contribute to the national policy on carbon negativity and neutrality. UNEP indicated that Bhutan has pledged its intention to maintain its current responsibility as a carbon sink, and accelerating HCFC phase-out is the first concrete activity that the Government would like to support in order to meet this target. Bhutan believes that through an accelerated HPMP, not only a reduction in the use of ODS will be met, but also the introduction of low GWP alternatives will be encouraged in a shorter time period. The submitted action plan describes this commitment, and lists activities that are either already underway or planned, as well as assurances of co-financing the activities both from the government as well as from potential sources. UNEP is certain that Bhutan will be able to meet this commitment because of the relatively small HCFC consumption of the country, and the strong commitment of the Government to strictly enforce these actions.

29. The Secretariat also raised concerns on how the country might be able to meet the targets for accelerated phase-out when Bhutan will have bordering countries where HCFCs will still be available. UNEP replied that the submitted plan takes this into account by prioritizing bilateral discussions with these neighbouring countries particularly India and China, and getting agreements that will be beneficial to all countries concerned, see item 8 "Bilateral Cooperation with India and China".

30. In discussing the individual activities and the corresponding total cost of the initial HPMP submission with UNEP and UNDP, the Secretariat noted decision 62/10 where the Executive Committee decided that for the HCFC phase-out management plans which addressed phase-out of HCFCs ahead of the Montreal Protocol schedule and had been submitted in line with decision 60/15, the total funding available for achieving 100 per cent phase-out would be extrapolated from that available for meeting the 35 per cent reduction in consumption as prescribed in the table in subparagraph f(xii) of decision 60/44. In line with this decision, Bhutan may be entitled for up to a maximum funding level of US \$470,000 if the Executive Committee agrees to an accelerated phase-out.

31. The Secretariat also noted that in its submission to the 62<sup>nd</sup> Meeting, the HPMP included funds for IS (US \$270,000 for 2012-2020), and confirmed with UNEP whether the country still wishes to do so in line with decision 62/15 in which the Executive Committee decided "to reiterate that the inclusion of institutional strengthening (IS) funding in an HCFC phase-out management plan (HPMP), in line with decision 59/17, made it subject to the performance-based targets under the multi-year agreement covering the HPMP including all the conditions required for future tranche funding". UNEP indicated to the

Secretariat that the country wishes to exclude the IS from the HPMP, and the corresponding funds were adjusted accordingly.

32. After further discussion of the activities and how these would allow the country to comply with the phase-out measures of the Montreal Protocol, the total level of funding for the implementation of the HPMP has been agreed at US \$470,000 for HPMP implementation as summarised in Table 7 below. The funding level for the HPMP implementation is based on a one time funding for accelerated HCFC phase-out and on the selected starting point using 2009 actual reported consumption of 5.6 mt (0.31 ODP tonnes). The agreed distribution of funds for the activities are shown in Table 7 below:

Table 7: Revised level of funding for the HPMP of Bhutan for accelerated phase-out (US \$)

<b>Description</b>	<b>UNEP (US\$)</b>	<b>UNDP (US\$)</b>	<b>Total (US\$)</b>
HCFC phase-out policies and enforcement	108,000		108,000
Capacity Building <ul style="list-style-type: none"> <li>• Training for officers of customs and other law enforcement departments</li> <li>• Travel cost for trainees</li> </ul>	63,000		63,000
Servicing technician training and certification programme	111,000		111,000
Technical assistance for the refrigeration servicing sector (investment component) <ul style="list-style-type: none"> <li>• Reclaim programme</li> <li>• End-user retrofit/ replacement pilot incentive programme</li> </ul>		188,000	188,000
<b>Total</b>	<b>282,000</b>	<b>188,000</b>	<b>470,000</b>

#### Impact on the climate

33. The proposed technical assistance activities in the HPMP, which include the introduction of better servicing practices and enforcement of HCFC import controls, will reduce the amount of HCFC-22 used for refrigeration servicing. Each kilogram (kg) of HCFC-22 not emitted due to better refrigeration practices results in the savings of approximately 1.8 CO<sub>2</sub>-equivalent tonnes saved. Although a calculation of the impact on the climate was not included in the HPMP, the activities planned by Bhutan, in particular its above-average efforts to improve servicing practices and reduce associated refrigerant emissions and its proposal to accelerate phase-out by 10 years earlier than the Montreal Protocol schedule indicate that it is likely that the country will surpass the level of 987 CO<sub>2</sub>-equivalent tonnes that would not be emitted into the atmosphere as estimated in the 2011-2014 business plan. However, at this time, the Secretariat is not in a position to quantitatively estimate the impact on the climate. The impact might be established through an assessment of implementation reports by, *inter alia*, comparing the levels of refrigerants used annually from the commencement of the implementation of the HPMP, the reported amounts of refrigerants being recovered and recycled, the number of technicians trained and the HCFC-22 based equipment being retrofitted.

#### Co-financing

34. In response to decision 54/39(h) on potential financial incentives and opportunities for additional resources to maximize the environmental benefits from HPMPs pursuant to paragraph 11(b) of decision XIX/6 of the Nineteenth Meeting of the Parties, UNEP explained that the Government of Bhutan will provide US \$7,000.

2011-2014 business plan of the Multilateral Fund

35. UNEP and UNDP are requesting US \$470,000 plus support costs for implementation of the HPMP. The total value requested for the period 2011-2014 of US \$314,180 including support cost is within the total amount requested by UNEP and UNDP in the business plan.

36. Based on the estimated HCFC baseline consumption in the servicing sector of 5.61 mt, Bhutan's allocation up to the 2020 phase-out should be US \$164,500 in line with decision 60/44.

Draft agreement

37. A draft Agreement between the Government of Bhutan and the Executive Committee for HCFCs phase-out is contained in Annex I to the present document.

**RECOMMENDATION**

38. In light of the new information provided, the Executive Committee may wish to consider:

- (a) Whether to approve, in principle, the HCFC phase-out management plan (HPMP) for Bhutan for the period 2011 to 2020 for an accelerated HCFC phase-out, at the amount of US \$523,580, comprising of US \$282,000 and agency support costs of US \$36,660 for UNEP, and US \$188,000 and agency support costs of US \$16,920 for UNDP; on the understanding that there will be no more funding eligibility for HCFC phase-out in the country after 2020;
- (b) Noting that the Government of Bhutan had agreed at the 63<sup>rd</sup> Meeting to establish as its starting point for sustained aggregate reduction in HCFC consumption the level of consumption in 2009 which has been reported at 0.31 ODP tonnes under Article 7 of the Montreal Protocol;
- (c) Whether to approve the draft Agreement between the Government of Bhutan and the Executive Committee for the reduction in consumption of HCFCs, as contained in Annex II to the present document;
- (d) Requesting the Fund Secretariat, once the baseline data were known, to update Appendix 2-A to the draft Agreement to include the figures for maximum allowable consumption, and to notify the Executive Committee of the resulting levels of maximum allowable consumption and of any potential related impact on the eligible funding level, with any adjustments needed being made when the next tranche was submitted; and
- (e) Whether to approve the first tranche of the HPMP for Bhutan, and the corresponding implementation plan, at the amount of US \$189,300, comprising of US \$100,000 and agency support costs of US \$13,000 for UNEP, and US \$70,000 and agency support costs of US \$6,300 for UNDP.

## **Action plan for Mainstreaming HCFC phase-out Management Plan of Kingdom of Bhutan with the National Policy on Carbon Negative and Carbon Neutral Status**

### **1. Background**

The Royal Government of Bhutan is fully committed to pursue sustainable development goals based on the philosophy of **Gross National Happiness (GNH)** developed in consonance with Article 5 of the country's Constitution that requires thrust on protection and conservation of the environment. The Royal Government has reaffirmed this commitment to the international community as well. At COP 15 at Copenhagen, the country pledged to remain carbon negative and carbon neutral. Attached at **Annex-I** is the Declaration of the Kingdom of Bhutan of 11<sup>th</sup> December, 2009 presented at Copenhagen. This document should be read in continuation to our earlier letter to the 62<sup>nd</sup> ExCom, dated 2.12.2010.

Bhutan is the only country among 194 UN members that has declared itself 'climate negative', Bhutan soaks up more greenhouse gases than it emits. While other countries are still struggling to become carbon neutral but are far from the goal, Bhutan leads with its ambitious projects to reduce the use of fossil fuels.<sup>1</sup>

The country has also made a strong commitment to a global deal that limits rise in mean temperatures below 1.5°C, which is better than the commitments of the other Parties to the Copenhagen Accord and Cancun Agreement (of 2°C) by 2050. The Government of Bhutan has accorded a very high priority to maintain its status of being carbon neutral by taking necessary legal and regulatory measures. The country is in the process of development of a comprehensive action plan for this purpose and has sought assistance from various development partners, as indicated in the Declaration. We view the HPMP as an integral part of our national policy and the Declaration on 'Carbon Neutrality' and the very first step of this comprehensive strategy for which we have sought assistance from International partners. The country proposes to put in place a comprehensive framework to enhance mitigation actions so that it not only preserves carbon neutral status but is able to go beyond to being carbon negative. HPMP implementation is an important element of this comprehensive mitigation strategy<sup>2</sup>.

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<sup>1</sup> <http://southasia.oneworld.net/todaysh headlines/bhutan-caught-in-a-scrabble-of-climate-change>

<sup>2</sup> Bhutan, which has low fossil fuel use because of poverty twinned with strong forest protection, plans to stay "carbon neutral" under a policy of "gross happiness to save our planet". But fossil fuel use is rising with the appearance of more cars on the roads and industrial development. The government has taken a very ambitious decision to declare 'carbon neutrality'. Run on Buddhist principles of respect for nature, Bhutan is the only country among 194 UN members to have formally told the United Nations in 2010 that it is now "climate negative" -- soaking up more greenhouse gases more than it emits.

## 2. Constitutional Provisions for Maintaining Carbon Neutrality

The Article 5 of the Constitution deals with issue of environment making each Bhutanese citizen a trustee of the Kingdom's natural resources and environment. It also requires the Government to enact suitable legislation for protection, conservation and improvement of environment as well as prevention of pollution to secure an ecologically sustainable environment. The Article also requires the Government to ensure that a minimum of sixty percent of Bhutan's total land shall be maintained under forest cover for all time. Further, Article 8 of the Constitution dealing with Fundamental Duties makes it imperative for every Bhutanese citizen to preserve, protect and respect the environment.

## 3. Sectoral GHG Emissions of Bhutan

As per the first national Communication of the Government of Bhutan to UNFCCC in 2000, the sector distribution of GHG emissions is as follows:

S.No	Sector	% GHG Emissions
1	Industry	52%
2	Transport	37%
3	Agriculture	8%
4	Others	3%

The total GHG emissions of Bhutan were 1.5 million tons while the country provided GHG sink of around 6.3 million tons thereby being carbon negative with -4.8 million tons of GHG emissions. Implementation of HMPM is likely to reduce about 9.5% of overall GHG emissions and 18% of emissions from the industrial sector. The Government has initiated several measures to maintain the status of being carbon neutral as summarized in the next paragraph.

## 4. Regulatory Measures to maintain neutral GHG emissions

The Government of Bhutan has put in place several measures to mitigate GHG emissions, particularly in sectors where the contribution is high. They are:

### (i) Mitigation of GHG emissions in the Industrial Sector

(a) Environmental assessment of industrial establishments under the Environmental Assessment Act 2000 and the Regulation for the Environmental Clearance of Projects 2002 are being conducted in major industries and recommendations are being implemented. The Ministry of Trade and Industry has set up a Cleaner Technology and Environmental Management (CTEM) scheme to promote cleaner technology and environmental management in existing and new industries. A CTEM Fund with a corpus of US\$ 5 million is envisaged to generate interest that can be used to support CTEM initiatives. A significant proportion of GHG emissions reduction will come from RAC sector, with HCFC phaseout to non-ODS and low-GWP alternatives being at the core.

(b) Power Sector Master Plan and Rural Energy Master Plan have been evolved with the basic principle of developing and enhance access to clean energy for socio-economic development at national as well as local level.

(c) Regulations for the Environmental Clearance of Projects and Strategic Environmental Assessment 2002 has been promulgated to ensure that environment clearance is mandatory for all new industrial ventures. The new regulations will ensure mandatory use of non-HCFC and low-GWP alternatives for RAC for all new industrial establishments on implementation of HPMP.

(d) Vehicular pollution abatement with the focus on improved fuel quality and vehicle emissions standards has been put in place. A process of regular certification to emission norms by vehicles has been put in place under a regulation. Further, the Government has banned import of reconditioned vehicles in 1998. In addition, to control GHG emissions in transport, which is the fastest growing in the country, investments in public transport is being promoted.

## **5. Mainstreaming HCFC Phase out strategy into the National Policy**

Mainstreaming HCFC phaseout in the overall framework is important given that the demand for HCFC is rising at an average rate of about 27% per annum. The total installed quantity of HCFC in the country is about 19.07 tons and based on the leakage rates estimated annual need is about 5.6 tons in 2010 as per the HPMP. The industrial sector, large office buildings and Government establishments sector is the biggest HCFC consuming sector in Bhutan and accounts for 89% of total consumption in the country. Domestic and household AC sector consists mainly of window and split type ACs and the split type ACs consumes almost 11% of total HCFC consumed in Bhutan.

Given that industrial sector is the highest emitter and that the Government has initiated measures for mitigation, it is important that these are supported by taking steps to migrate to non-ODS and low-GWP refrigerants. Commonly available alternatives to HCFCs in air-conditioning systems are HFC-blends R-410A and R-407C have similar or higher GWP than HCFC-22. Therefore the new systems installed should have better energy efficiency in order to have climate benefit.

The equipments that will be imported into the country will be based on non-ODS and very low GWP alternatives so that Carbon Negative status can be strengthened. Activities under HPMP have, therefore, been designed to assist Bhutan to maintain this Carbon Negative status.

To address this issue energy efficiency Standard and Labeling Program (SLP) together with a Framework for Efficient and Low HCFC Economic Development (FELHED) is included in the HPMP to ensure that the shift towards non HCFC-will follow the intent of overall carbon emission reduction and contribute to maintain the carbon neutral emission status of the country. Successful implementation of the (HPMP) will achieve total phase-out of HCFCs by 2020. Under the unconstrained demand scenario, elimination of 110

metric tons of HCFC by 2020 will reduce approximately 143,000 tons CO<sub>2</sub> eq. emission cumulatively which is about 9.5% of the annual emissions in the country (around 18% of emissions from industrial sector).

Further, implementation of SLP will help reduce the electricity consumption in industrial as well as commercial (Government establishments, offices, etc) uses thereby reducing the GHG emissions further. The energy efficiencies of all the new as well as existing stock of ACs and refrigerators could be increased by at least 20% thereby supplementing the ongoing and future mitigation efforts of the country.

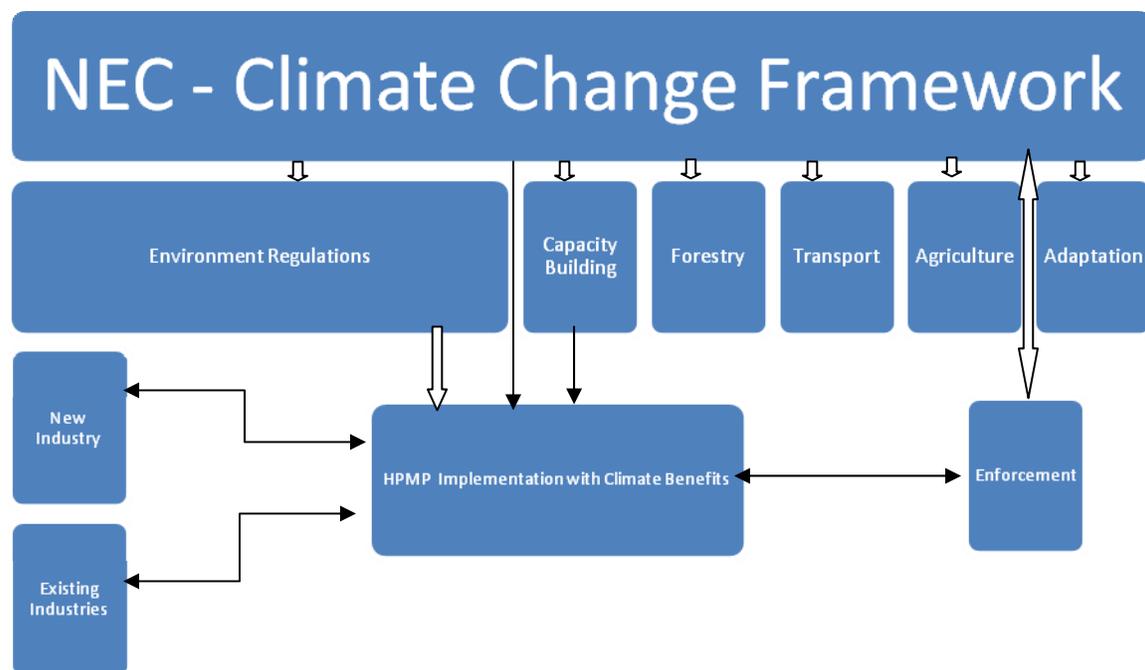
## **6. Mainstreaming HPMP in the National Institutional Framework**

The Royal Government, in an effort, to enhance environmental sustainability has initiated an important program in the implementation of projects for mainstreaming climate and other environmental considerations in all sectors. This means that the five year development plans implemented by the Government will now incorporate environmental considerations in all sectors in their plans and programs starting 2012 (the eleventh five year plan). In such programming at the project level, the use of ODS will be integrated and monitored and will feature prominently in the guidelines that will be developed to enable implementation.

The Government has set up the National Environment Commission (NEC) chaired by the Prime Minister with Ministers from all related Ministries to oversee and decide all matters relating to environment and its management in Bhutan. The NEC is the highest ranking body that has been mandated to oversee the implementation of all environmental commitments of the Government by resolving all inter-ministerial issues as well as fulfilling all international environmental obligations. The objective of an inter-ministerial NEC at the highest level is to ensure expeditious and uniform implementation of NEC decisions by effectively dealing with cross cutting issues. Mainstreaming HPMP activities in this direction has already been initiated. The advancement of HCFC phaseout deadline and introduction of energy efficiency measures has had the approval of the NEC.

The composition of NEC is such that it includes all the relevant Ministries covering the major users of HCFC such as the Ministry of Agriculture and Forests, Ministry of Works and Human Settlement, Ministry of Economic Affairs and others. This includes industrial establishments, Hotels and Restaurants, Households, Offices, etc. HPMP implementation monitoring for the next 10 years will be spearheaded within this national institutional framework thereby providing the necessary political and official commitment to achieve the HPMP targets to complement the this national climate and carbon neutral policy. As indicated earlier in para 3, the industrial and transport sector have the highest share in overall GHG emissions. While the Government has put in place measures for the transport sector and is in the process of further strengthening them. HPMP, with SLP and FELHED components, will provide the necessary push for not only reducing GHG emissions from all new installations of RAC but will also cover the replacements of

existing stock. It is, therefore, an important part of the comprehensive policy that is being ushered in. The emerging institutional arrangement is as under:



## 7. Action Plan

The Government has committed to the following action plan in support of its commitment to accelerate the HCFC phaseout by 10 years. The action plans seeks to achieve the commitment of Carbon Neutrality and Carbon Negativity that has already been announced through:

- (a) Ensuring that the implementation of HPMP would result in additional GHG mitigation of 9.5% of the annual emissions of 1.5 million tons of CO<sub>2</sub>-eq.
- (b) Being the first step as a part of the comprehensive strategy being unveiled for preserving the unique status of our country in terms of being a large sink of GHG emissions.

The actions that are already underway or are planned not only indicate the resolve of the Government but also lists out the commitment to provide adequate co-financing for these actions:

S.No	Initiative	Instruments/ Measures	Timelines	Way Forward
1	<b>Regulatory</b>	Restriction and import/ export controls of HCFC and HCFC based equipments alongwith labeling of HCFC containers	Notification to be issued in 2011	- Mandatory use of non-HCFC and low GWP refrigerants by industry and other establishments;
2		The NOU will strengthen the	Action	

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	<b>Interventions and their enforcement</b>	existing import/ licensing system incorporating a quota system as per the new requirements in early 2011.	already initiated and is likely to be completed in 2011	<ul style="list-style-type: none"> <li>- Closure of industries/ suspension for not complying with HCFC control regulations;</li> <li>- Green/ Full cost accounting systems for accountability and transparency in complying with the regulations by the RAC industry on HCFC issues.</li> </ul>
3		Green environmental tax to be levied by on equipments using HCFC to discourage their use	2012	
4		The equipments that will be imported into the country will be based on non-ODS and very low GWP alternatives so that Carbon Negative status can be strengthened. Mandatory certification of technicians for servicing RAC equipments.	2013	
5		<b>Energy Efficiency initiatives</b>	Design and implement the <b>National Regulations, Policies and Measures (NRPM)</b> and establish an institutional framework for energy efficiency for a robust legal, regulatory and policy framework to create and sustain market based energy efficiency	
6	Establish the <b>Standards and Labeling Programme (SLP)</b> for ACs and Refrigerators with energy efficiency		2011-2013	
7	Develop and implement <b>FELHED</b> with the objective of retrofitting/ replacement of all HCFC based appliances with non-HFC ones by 2020. Development of the Energy Service Company (ESCO) market with adequate financing instruments will be the major activity		2011-2013	
8	<b>Bilateral Agreement with India and China</b>	Bilateral trade arrangements will ensure that exporters of HCFCs and HCFC based equipments from India and China are obligated as a special dispensation not to export to Bhutan and thereby putting Bhutan into non-compliance, taking note of the advancement of HCFC phaseout by Bhutan	2017	This special dispensation will be mainstreamed in the ongoing bilateral trade agreements.

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		by 2020.		
8	<b>Training and Capacity Building</b>	Mainstreaming upcoming regulatory framework and its enforcement in training curriculum of all Customs officers in Bhutan, including new entrants, adaptation of UNEP and EIA training materials for Customs officers on understanding and detecting illegal ODS trade across borders, etc. Strengthening regional networks, exchange of best practices, etc will be undertaken.	2011-2013	- Enhancing capacity to enforce environmental standards of all regulatory agencies like Customs, Ministry of Trade and Industry, etc. for regulations related to HCFC phaseout  -Capacity building for ensuring compliance with
9		Capacity building and training of servicing technicians to improve the servicing practices through adoption of good practices in the servicing sector by building up and sustaining the required technician base in Bhutan. The Ministry of Labour and Human Resources has identified the VTI at Samthang for delivering such training with adequate counter part funding from the Ministry in addition to the HPMP funds	2011-2020	Green Accounting system to be adopted.  - Environment trust fund for supporting activities relating to HPMP implementation
10		Certification of refrigeration technicians will be undertaken to improve the servicing practice of the industry and thereby reduce the use of HCFCs to service RAC equipment. The Ministry of Labour and Human Resources will conduct training and establishment of the certification system of refrigeration technicians in consultation with NOU	2011-2015	
11		NOU will partner with the major industry associations to organize workshops to update knowledge of HCFC phase out policies, alternatives and market as well as the long-term financial and environmental benefits (cost and energy	2011-2015	

## Annex I

		savings) of investing in ozone and climate friendly energy efficient units.		
12	<b>Information exchange, dissemination and advocacy programmes</b>	Issue of HPMP strategy brochures, HCFC phase-out schedule and policies and best practices for industry stakeholders as the primary target	2011-2013	<ul style="list-style-type: none"> <li>- Promotion of eco-education curricula in schools with focus on the need for HCFC phase out and climate change issues</li> <li>- Media outreach to influence consumer behavior in favour of non-HCFC and low-GWP refrigerants</li> </ul>
13		Press releases and promotional programs	2011-2013	
14		Public awareness: TV spots; Radio broadcasts; Distribution of leaflets, posters and movies	2011-2013	
15		Learning module will feature in the IT network set-up across country for the interested candidates	2011-2013	

### 8. **Bilateral Cooperation with India and China**

Bhutan has committed to advance the deadline for phaseout of HCFC by 10 years, i.e. by 2020. However, its immediate neighbours, India and China, who supply most of Bhutan's HCFC demand, will phase out their production of HCFC gases and HCFC based equipments only by 2030. It is important, therefore, that Bhutan will seek agreements with these countries to not export their equipments and gases to Bhutan. Such bilateral arrangements will be mainstreamed into the wider annual bilateral trade talks that take place between the two countries (India & Bhutan) under the framework of the Agreement on Trade, Commerce and Transit between The Government of The Republic of India and The Royal Government of Bhutan. This agreement will ensure that exporters of HCFCs and HCFC based equipments from India are obligated as a special dispensation not to export such equipments to Bhutan and thereby putting Bhutan into non-compliance. Such bilateral arrangements will be initiated in 2017. Annual bilateral talks at the level of DG Customs of the two countries under the Trade Agreement will ensure that differing phaseout schedules of Bhutan and India will not put Bhutan in any undue risk of illegal trade from the neighbours.

### 9. **Conclusion**

This document presents the comprehensive action plan evolved to implement the strong commitment of the Royal Government of Bhutan of the accelerated phase out of HCFC, 10 years ahead of schedule on the strong resolve and rationale of preserving the carbon neutral status. This is part of the comprehensive action plan that the Government is evolving to maintain its carbon neutral status. The HPMP seeks to target one of the fastest growing sources of GHG emissions, namely the RAC sector that can have an adverse impact on the stated objectives of the Government. The action plan highlights the strong political support (through NEC chaired by the Prime Minister with all other relevant Ministers), mainstreaming HPMP implementation in the five year planning

## Annex I

process, institutional strengthening of NOU and focal points in relevant Ministries/ Agencies, overarching regulatory architecture, comprehensive training/ capacity building/ awareness enhancement initiatives, commitment to innovative mechanisms to promote energy efficiency to supplement the regulatory efforts and financial support, both in-kind as well as co-financing.



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སློན་ཆེན། Prime Minister



11 December, 2009.

**Declaration of the Kingdom of Bhutan – the Land of Gross National Happiness to Save our Planet**

The Royal Government of Bhutan, on behalf of all its citizens, makes this commitment to our children and their children, with the conviction that climate change is a reality and that actions need to be taken now rather than later to address its disastrous consequences. We believe that addressing the challenges posed by climate change requires the commitment of all countries, regardless of size, geography, economic or military strength and that it is the moral responsibility of the leaders of the present generation to save the planet for future generations. In spite of our status as a small, mountainous developing country with so many other pressing social and economic development needs and priorities, we feel that there is no need greater or more important than keeping the planet safe for life to continue. *Therefore, we commit ourselves to keep absorbing more carbon than we emit – and to maintain our country's status as a net sink for Green House Gases (GHG).* Our most recent estimates of annual GHG emission is around 1.5 million tonnes of carbon against a sequestration amount of 6.3 million tonnes (Draft GHG Inventory Report, 2000) leaving us with a net emission of -4.7 million tonnes. This makes us perhaps one of the few countries in the world to have a negative carbon emission. While making this sincere commitment, we call on the global community to come forward with a mechanism to reward our resolve to fulfill this commitment and support us to undertake appropriate mitigation and adaptation measures to adapt to climate change.

**Measures taken to protect the environment**

Our success in protecting our fragile environment thus far is testimony to the wisdom of pursuing sustainable development based on our philosophy of Gross National Happiness (GNH). We owe it to the enlightened leadership of our Fourth King His Majesty Jigme Singye Wangchuck for giving us this development vision and for skillfully guiding us to balance economic development with the preservation of our environment, culture and security. The following measures were specifically taken to achieve this balanced development:

1



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- Protection and conservation of forests through adoption of a code of management and use of forests, ban on export of timber, restriction on burning of forests for pasture or agriculture and a considered emphasis on harnessing the indirect benefits from forests through hydropower and ecotourism. As a result, we have over 72% of our country's area under forest cover, an increase from around 45% in 1961 when the first five-year development plan was initiated.
- Dedication of over 35% of the country's geographical area under parks and protected areas since the 1980s. As of now, 5063 species of vascular plants, 678 species of birds and 200 species of mammals are recorded and the scope for discovering new species is very high because of the diverse and intact ecosystems.
- Focus on the development and use of renewable energy from hydro-electricity and solar power.
- Reduction of slash and burn farming (shifting cultivation) by offering alternative eco-friendly land use systems to farmers.
- Adoption of integrated pest and nutrient management relying on physical and biological means of controlling pests and diseases and practicing extensive agriculture as opposed to intensive agriculture. Our annual average use of plant nutrients from chemical fertilisers is only 9 kg per ha against a world average of 90 kg/ha.
- Establishment of the first ever trust fund for environmental conservation in 1996 which enabled the planning and implementation of urgent conservation initiatives.
- Mandatory requirement of environmental clearance for all development projects prior to implementation.



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ལྷོ་ཚེ་བ། Prime Minister



- Suspension of operations or closing down of manufacturing industries that do not comply with prescribed pollution control measures.
- Banning of mountaineering and protection of mountain peaks and other sacred sites such as mangroves, lakes and springs.
- Sustained support from our development partners to the environmental sector.

**The cost of environmental conservation**

Both the country and the people of Bhutan have made significant sacrifices. The success in maintaining a healthy ecosystem has not come easily and without costs. Bhutan has had to forego considerable economic opportunities and its people have made and will continue to make many sacrifices by way of foregoing better options for improving their livelihoods. These include:

- Loss of revenue from logging and export of timber to neighboring countries where the demand for wood is very high.
- Reduced returns from farming due to little or no application of fertilizers and pesticides.
- Loss of crops and livestock to wildlife depredation as a result of the strict enforcement of wildlife protection laws.
- Reduced employment and income generation from tourism as a result of adopting non-intrusive forms of tourism instead of mass tourism.
- Loss of revenue from mining of mineral resources, the economic returns from which are by no means insignificant considering our small population size.

3



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- High pricing of local natural resources and raw materials for construction like timber, stones, sands and non-timber forest products as a result of adopting a strict management code for extracting them.

**The way forward - managing for the future**

Bhutan can not only manage to keep carbon emission at its current levels but also enhance its carbon sequestration capacity because we have already put in place a number of policy and strategic choices. These include:

- The Constitution of the Kingdom of Bhutan 2008 requires the country to maintain at least 60% of our geographical area under forest cover at all times and mandates every Bhutanese citizen to be a “...trustee of the Kingdom’s natural resources and environment for the benefit of present and future generations...” (Article 5).
- Declaration of another 4954 sq.km of land as a national park bringing the total area under parks and protected areas to 19,750 sq.km (or ~51% of land area) of which close to 10% consists of biological corridors allowing the free movement of genes between the parks.
- Empowerment of local communities to take ownership and responsibility for managing natural resources through community forestry schemes. Already 198 community forestry groups are engaged in this scheme involving over 7000 households (~49,000 people) representing nearly 8% of our total population.
- Enhanced capacity to monitor air and water qualities and to enforce environmental standards on industries.
- Prioritisation of eco-friendly hydropower generation, green tourism, and organic agriculture as priority sectors for economic development.
- Adoption of sustainable land management practices to address land degradation.



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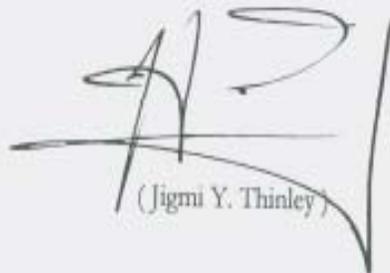
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Royal Government of Bhutan  
Prime Minister



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- Adoption of a watershed and climate change management strategy focusing on eco-friendly land use practices, reforestation of existing degraded areas and enhancing regeneration of old forests.
- Adoption of a policy to plough-back 1% royalty on hydroelectricity to watershed management.
- Adoption of a “Green/Full Cost Accounting” system to make agencies and individuals responsible and accountable for adopting proper environmental standards and ethics.
- Promotion of eco-literacy through the school curricula.



(Jigmi Y. Thinley)

## Annex II

### **DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF BHUTAN AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS**

1. This Agreement represents the understanding of the Government of Bhutan (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 tonne prior to 1 January 2020 in compliance with Montreal Protocol schedules with the understanding that this figure is to be revised one single time in 2011, when the baseline consumption for compliance would be established based on Article 7 data, with the funding to be adjusted accordingly, as per decision 60/44 and that there will be no more funding eligibility for any future HCFC phase-out after 2020.
2. The Country agrees to meet the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A (“The Targets, and Funding”) in this Agreement as well as in the Montreal Protocol reduction schedule for all Substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of the Substances which exceeds the level defined in row 1.2 of Appendix 2-A (“maximum allowable total consumption of Annex C, Group I Substances”; the Target) as the final reduction step under this Agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances which exceeds the level defined in row 4.1.3 (remaining eligible consumption).
3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees in principle to provide the funding set out in row 3.1 of Appendix 2-A (“Targets and Funding”) to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A (“Funding Approval Schedule”).
4. The Country will accept independent verification, to be commissioned by the relevant bilateral or implementing agency, of achievement of the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A (“The Targets, and Funding”) of this Agreement as described in sub-paragraph 5(b) of this Agreement.
5. The Executive Committee will not provide the Funding in accordance with the Funding Approval Schedule unless the Country satisfies the following conditions at least 60 days prior to the applicable Executive Committee meeting set out in the Funding Approval Schedule:
  - (a) That the Country has met the Targets for all relevant years. Relevant years are all years since the year in which the hydrochlorofluorocarbons phase-out management plan (HPMP) was approved. Exempt are years for which no obligation for reporting of country programme data exists at the date of the Executive Committee Meeting at which the funding request is being presented;
  - (b) That the meeting of these Targets has been independently verified, except if the Executive Committee decided that such verification would not be required;
  - (c) That the Country had submitted tranche implementation reports in the form of Appendix 4-A (“Format of Tranche Implementation Reports and Plans”) covering each previous calendar year, that it had achieved a significant level of implementation of activities initiated with previously approved tranches, and that

the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and

- (d) That the Country has submitted and received approval from the Executive Committee for a tranche implementation plan in the form of Appendix 4-A (“Format of Tranche Implementation Reports and Plans”) covering each calendar year until and including the year for which the funding schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A (“Monitoring Institutions and Roles”) will monitor and report on implementation of the activities in the previous tranche implementation plan in accordance with their roles and responsibilities set out in Appendix 5-A. This monitoring will also be subject to independent verification as described in sub-paragraph 5(b).

7. The Executive Committee agrees that the Country may have the flexibility to reallocate the approved funds, or part of the funds, according to the evolving circumstances to achieve the smoothest phase-down and phase-out of the Substances specified in Appendix 1-A. Reallocations categorized as major changes must be documented in advance in a Tranche Implementation Plan and approved by the Executive Committee as described in sub-paragraph 5(d). Major changes would relate to reallocations affecting in total 30 per cent or more of the funding of the last approved tranche, issues potentially concerning the rules and policies of the Multilateral Fund, or changes which would modify any clause of this Agreement. Reallocations not categorized as major changes may be incorporated in the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the Tranche Implementation Report. Any remaining funds will be returned to the Multilateral Fund upon closure of the last tranche of the plan.

8. Specific attention will be paid to the execution of the activities in the refrigeration servicing sub-sector, in particular:

- (a) The Country would use the flexibility available under this Agreement to address specific needs that might arise during project implementation; and
- (b) The Country and the bilateral and implementing agencies involved will take full account of the requirements of decisions 41/100 and 49/6 during the implementation of the plan.

9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNEP has agreed to be the lead implementing agency (the “Lead IA”) and UNDP have agreed to be cooperating implementing agency/agencies (the “Cooperating IA”) under the lead of the Lead IA in respect of the Country’s activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of any of the agencies taking part in this Agreement.

10. The Lead IA will be responsible for carrying out the activities of the plan as detailed in the first submission of the HPMP with the changes approved as part of the subsequent tranche submissions, including but not limited to independent verification as per sub-paragraph 5(b). This responsibility includes the necessity to co-ordinate with the Cooperating IA to ensure appropriate timing and sequence of activities in the implementation. The Cooperating IA will support the Lead IA by implementing the activities listed in Appendix 6-B under the overall co-ordination of the

Lead IA. The Lead IA and Cooperating IA have entered into a formal agreement regarding planning, reporting and responsibilities under this Agreement to facilitate a co-ordinated implementation of the Plan, including regular co-ordination meetings. The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IA with the fees set out in rows 2.2 and 2.4 of Appendix 2-A.

11. Should the Country, for any reason, not meet the Targets for the elimination of the Substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amounts set out in Appendix 7-A in respect of each ODP tonne of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement, and take related decisions. Once these decisions are taken, this specific case will not be an impediment for future tranches as per paragraph 5.

12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decision that may affect the funding of any other consumption sector projects or any other related activities in the Country.

13. The Country will comply with any reasonable request of the Executive Committee, and the Lead IA and the Cooperating IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IA with access to information necessary to verify compliance with this Agreement.

14. The completion of the HPMP and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption has been specified in Appendix 2-A. Should at that time activities be still outstanding which were foreseen in the Plan and its subsequent revisions as per sub-paragraph 5(d) and paragraph 7, the completion will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per Appendix 4-A (a), (b), (d) and (e) continue until the time of the completion if not specified by the Executive Committee otherwise.

15. All of the agreements set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

## APPENDICES

### APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	0.31

## APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Parameter/Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	0.31	0.31	0.31	0.31	0.28	0.28	0.28	0.28	0.28	0.20	0.11
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	0.31	0.31	0.28	0.28	0.25	0.25	0.2	0.2	0.1	0.007	0.301
2.1	Lead IA (UNEP) agreed funding (US\$)	100,000		70,000			82,000				30,000	282,000
2.2	Support costs for Lead IA (US\$)	13,000		9,100			10,660				3,900	36,660
2.3	Cooperating IA (UNDP) agreed funding (US\$)	70,000		42,000			57,000				19,000	188,000
2.4	Support costs for cooperating IA (US\$)	6,300		3,780			5,130				1,710	16,920
3.1	Total agreed funding (US\$)	170,000		112,000			139,000				49,000	470,000
3.2	Total support costs (US\$)	19,300		12,880			15,790				5,610	53,580
3.3	Total agreed costs (US\$)	189,300		124,880			154,790				54,610	523,580
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)											0.301
4.1.2	Phase-out of HCFC-22 to be achieved through previously approved projects (ODP tonnes)											-
4.1.3	Remaining eligible consumption of HCFC-22 (ODP tonnes)											0

## APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval not earlier than the second meeting of the year specified in Appendix 2-A.

## APPENDIX 4-A: FORMAT OF TRANCHE IMPLEMENTATION REPORTS AND PLANS

1. The submission of the Tranche Implementation Report and Plan will consist of five parts:
  - (a) A narrative report regarding the progress in the previous tranche, reflecting on the situation of the Country in regard to phase out of the Substances, how the different activities contribute to it and how they relate to each other. The report should further highlight successes, experiences and challenges related to the different activities included in the Plan, reflecting on changes in the circumstances in the Country, and providing other relevant information. The report should also include information about and justification for any changes vis-à-vis the previously submitted tranche plan, such as

delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided for in paragraph 7 of this Agreement, or other changes. The narrative report will cover all relevant years specified in sub-paragraph 5(a) of the Agreement and can in addition also include information about activities in the current year;

- (b) A verification report of the HPMP results and the consumption of the Substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification has to be provided together with each tranche request and will have to provide verification of the consumption for all relevant years as specified in sub-paragraph 5(a) of the Agreement for which a verification report has not yet been acknowledged by the Committee;
- (c) A written description of the activities to be undertaken in the next tranche, highlighting their interdependence, and taking into account experiences made and progress achieved in the implementation of earlier tranches. The description should also include a reference to the overall Plan and progress achieved, as well as any possible changes to the overall plan foreseen. The description should cover the years specified in sub-paragraph 5(d) of the Agreement. The description should also specify and explain any revisions to the overall plan which were found to be necessary;
- (d) A set of quantitative information for the report and plan, submitted into a database. As per the relevant decisions of the Executive Committee in respect to the format required, the data should be submitted online. This quantitative information, to be submitted by calendar year with each tranche request, will be amending the narratives and description for the report (see sub-paragraph 1(a) above) and the plan (see sub-paragraph 1(c) above), and will cover the same time periods and activities; it will also capture the quantitative information regarding any necessary revisions of the overall plan as per sub-paragraph 1(c) above. While the quantitative information is required only for previous and future years, the format will include the option to submit in addition information regarding the current year if desired by the Country and the Lead IA; and
- (e) An Executive Summary of about five paragraphs, summarizing the information of above sub-paragraphs 1(a) to 1(d).

#### **APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES**

1. The overall monitoring will be the responsibility of NOU, Ministry of Industries.
2. The consumption will be monitored based on data collected from relevant government departments and crosschecking it with data collected from the distributors and consumers.
3. The NOU will be responsible for reporting and shall submit the following reports in a timely manner:
  - (a) Annual reports on consumption of Substances to be submitted to the Ozone Secretariat;
  - (b) Annual reports on progress of implementation of this Agreement to be submitted to the Executive Committee of the Multilateral Fund; and
  - (c) Project-related reports to the Lead IA

## **APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY**

1. The Lead IA will be responsible for a range of activities. These can be specified in the project document further, but include at least the following:

- (a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's phase-out plan;
- (b) Assisting the Country in preparation of the Tranche Implementation Plans and subsequent reports as per Appendix 4-A;
- (c) Providing verification to the Executive Committee that the Targets have been met and associated annual activities have been completed as indicated in the Tranche Implementation Plan consistent with Appendix 4-A;
- (d) Ensuring that the experiences and progress is reflected in updates of the overall Plan and in future Tranche Implementation Plans consistent with sub-paragraphs 1(c) and 1(d) of Appendix 4-A;
- (e) Fulfilling the reporting requirements for the tranches and the overall Plan as specified in Appendix 4-A as well as project completion reports for submission to the Executive Committee. The reporting requirements include the reporting about activities undertaken by the Cooperating IA;
- (f) Ensuring that appropriate independent technical experts carry out the technical reviews;
- (g) Carrying out required supervision missions;
- (h) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;
- (i) Co-ordinating the activities of the Cooperating IA, and ensuring appropriate sequence of activities;
- (j) In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country and the Cooperating IAs, the allocation of the reductions to the different budget items and to the funding of each implementing or bilateral agency involved;
- (k) Ensuring that disbursements made to the Country are based on the use of the indicators; and
- (l) Providing assistance with policy, management and technical support when required.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent organization to carry out the verification of the HPMP results and the consumption of the Substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement and sub-paragraph 1(b) of Appendix 4-A.

#### **APPENDIX 6-B: ROLE OF COOPERATING IMPLEMENTING AGENCY**

1. The Cooperating IA will be responsible for a range of activities. These activities can be specified in the respective project document further, but include at least the following:

- (a) Providing policy development assistance when required;
- (b) Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and refer to the Lead IA to ensure a co-ordinated sequence in the activities; and
- (c) Providing reports to the Lead IA on these activities, for inclusion in the consolidated reports as per Appendix 4-A.

#### **APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY**

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$180 per ODP kg of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target specified in row 1.2 of Appendix 2-A has not been met.

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