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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 PROPOSALS: ISLAMIC REPUBLIC OF IRAN

This document consists of comments and recommendations of the Fund Secretariat on the following sub-sectoral phase-out plans:

Phase-out

- HCFC phase-out management plan (stage I, first tranche) (HCFC phase-out in rigid and integral skin foam manufacturers and domestic refrigeration equipment manufacturers) — Germany and UNIDO
- HCFC phase-out management plan (stage I, first tranche) (HCFC phase-out in air-conditioning sector and one systems house) — UNDP
- HCFC phase-out management plan (stage I, first tranche) (HCFC phase-out in refrigeration servicing sector) — Germany and UNEP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Iran (Islamic Republic of)

(I) PROJECT TITLE	AGENCY
HCFC phase-out management plan (stage I, first tranche)	Germany, UNDP (lead), UNEP, UNIDO

(II) LATEST ARTICLE 7 DATA	Year: 2009	312.4 (ODP tonnes)

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP									Year: 2009
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab Use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123									
HCFC-124									
HCFC-141b		113.1		94.2					207.3
HCFC-142b									
HCFC-22		2.2		71.2	81.9				155.3

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline (estimate):	355.8	Starting point for sustained aggregate reductions:	355.7
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	0.0	Remaining:	246.4

(V) BUSINESS PLAN		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Germany	ODS phase-out (ODP tonnes)	26.5	20.2							0.5		47.2
	Funding (US $)	2,200,000	1,650,000	0	0					50,000		3,900,000
UNDP	ODS phase-out (ODP tonnes)	16.5	12.2	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.5
	Funding (US $)	3,226,000	2,220,730	1,528,390	0	0	0	0	0	0	0	6,975,120
UNEP	ODS phase-out (ODP tonnes)											0.0
	Funding (US $)	692,000	200,580	120,970	115,830							1,129,380
UNIDO	ODS phase-out (ODP tonnes)	32.2										32.2
	Funding (US $)	2,881,000										2,881,000

CONTINUATION OF PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Iran (Islamic Republic of)

(VI) PROJECT DATA			2011	2012	2013	2014	2015	Total
Montreal Protocol consumption limits (estimate)			n/a	n/a	355.8	355.8	320.2	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	355.7	355.7	320.1	
Project Costs requested in principle(US$)	Germany	Project costs	1,143,489	1,054,326			238,000	2,435,815
		Support costs	130,478	120,304			27,157	277,939
	UNDP	Project costs	3,000,000	2,095,800	728,746		663,000	6,487,546
		Support costs	225,000	157,185	54,656		49,725	486,566
	UNEP	Project costs	202,000				10,000	212,000
		Support costs	26,260				1,300	27,560
	UNIDO	Project costs	2,409,827				270,000	2,679,827
		Support costs	180,737				20,250	200,987
Total project costs requested in principle (US $)			6,755,316	3,150,126	728,746	0	1,181,000	11,815,188
Total support costs requested in principle (US $)			562,475	277,489	54,656	0	98,432	993,052
Total funds requested in principle (US $)			7,317,791	3,427,615	783,402	0	1,279,432	12,808,240

(VII) Request for funding for the first tranche (2011)		
Agency	**Funds requested (US $)**	**Support costs (US $)**
Germany	1,143,489	130,478
UNDP	3,000,000	225,000
UNEP	202,000	26,260
UNIDO	2,409,827	180,737

Funding request:	Approval of funding for the first tranche (2011) as indicated above
Secretariat's recommendation:	For individual consideration

PROJECT DESCRIPTIONS

1. At the 62nd Meeting, UNDP as the lead implementing agency submitted for consideration by the Executive Committee the HCFC phase-out management plan (HPMP) for the Islamic Republic of Iran together with the following three sub-sector plans to phase-out of 128.0 ODP tonnes of HCFCs by 2015:

(a) Sector plan for foam (Germany and UNIDO);

(b) Sector plan for HCFC phase-out in air-conditioning sector (UNDP);

(c) Sector plan for HCFC phase-out in refrigeration servicing sector (Germany and UNEP).

2. The costs of the sectoral phase-out plans as submitted, totalled US $20,207,707 plus support costs of US $1,682,107 for UNDP, UNEP, UNIDO and the Government of Germany.

3. Following informal consultations with interested Executive Committee members, where it was noted that additional time would be needed to assess any new information that was presented, and given the complex issues involved, the Committee decided to defer consideration of the HPMP for the Islamic Republic of Iran and accompanying sub-sector phase-out plans to the 63rd Meeting (decision 62/57).

4. On behalf of the Government of the Islamic Republic of Iran, UNDP, as the lead implementing agency, has re-submitted to the 63rd Meeting a revised HPMP together with three sub-sector phase-out plans at a total funding level of US $11,815,188 plus support costs of US $993,052.

Scope of the document

5. The Secretariat has updated the documents submitted to the 62nd Meeting (UNEP/OzL.Pro/ExCom/62/36 and Add.1) based on additional information submitted by the relevant bilateral and implementing agencies. This document presents an overview of the HPMP for the Islamic Republic of Iran, followed by a description of each of the sub-sectors mentioned above. The section on comments and recommendations has been arranged similarly to the description section.

Section 1. HPMP document

Background

6. The national ozone unit (NOU) is responsible for the overall management of ODS phase-out projects. In addition, 30 Ozone Cells at the provincial level provide support to enterprises, collect consumption data, and form the Islamic Republic of Iran Ozone Network (ION). A database was developed as a management tool for monitoring and reporting, and links the NOU to the provincial level ozone cells. The Customs Department, plays an important role in enforcement of ODS regulations and facilitating data collection process on ODS.

7. With respect to ozone depleting substances (ODS), the Islamic Republic of Iran has established a comprehensive policy and regulatory framework. The NOU is responsible for implementing the Comprehensive Legislation Plan (CLP), which monitors the progress of ODS phase-out activities against schedules, and the enforcement of approved legislations. ODS consumption is controlled through the import and export licensing system and a quota system.

HCFC consumption and sectoral distribution

8. The Islamic Republic of Iran has no HCFC production or exports. The total HCFC consumption of the two HCFCs consumed in the country, HCFC-22 and HCFC-141b, is shown in Table 1. HCFC-141b is used in the manufacture of foam products, primarily rigid foam and integral skin foam, and insulation foam for refrigeration and air-conditioning applications. HCFC-22 is used in manufacturing unitary air conditioners, commercial and industrial refrigeration equipment and the installation of industrial and transport air-conditioning equipment. It is also used to service HCFC-22 refrigeration and air-conditioning systems.

Table 1: HCFC Consumption by type of HCFC (Article 7 data)

HCFC	2006		2007		2008		2009	
	ODP t	mt	ODP t	mt	ODP t	mt	ODP	mt
HCFC-22	68.19	1,239.77	89.7	1,630.82	73.05	1,328.18	175.60	3,192.73
HCFC-141b	98.35	894.09	101.73	924.82	189.84	1,725.82	136.80	1243.64
Total	166.54	2,133.86	191.43	2,555.64	262.89	3,054.00	312.40	4,436.37

9. The increase in HCFC consumption from 2005 to 2009 is mainly due to a significant increase in manufacturing, assembling and servicing HCFC-22-based air-conditioners in domestic, commercial and industrial applications. The growth in HCFC-141b consumption is due to the conversion from CFC-11 to HCFC-141b technology by a large number of enterprises manufacturing foam products including insulation foam in refrigeration and air-conditioning applications during the period 2004-2009. Furthermore, data collection and processes used for reporting HCFCs were strengthened over the last two years. Through cross verification of HCFC import data (supply data) with data from manufacturers of HCFC-based equipment, products and services (demand data), the data reporting accuracy has improved, resulting in more accurate data collection and reporting in the years 2008 and 2009.

10. The HCFC baseline consumption for compliance is estimated at 355.7 ODP tonnes based on the average of the reported 2009 consumption data of 312.4 ODP tonnes under Article 7 of the Protocol and the estimated consumption for 2010 of 399.0 ODP tonnes.

11. The sectoral distribution of HCFCs used in 2009 and 2010 (estimate) in the Islamic Republic of Iran is shown in Table 2. About 77 per cent of the total HCFC consumption (in ODP tonne) was used in the manufacturing sector. According to the country programme data, HCFC-141b accounts for almost 45 per cent of the total HCFC consumption.

Table 2: Sectoral distribution by type of HCFC used in 2009 and 2010 (country programme data/forecast)*

Sector	2009 (mt)			2010 (mt)			Baseline (ODP t)
	HCFC-22	HCFC-141b	Total	HCFC-22	HCFC-141b	Total	
Foam							
Rigid PU panels		684.7	684.7		753.2	753.2	79.1
Rigid PU others		211.8	211.8		233.0	233.0	24.5
Integral skin		132.0	132.0		145.2	145.2	15.2
XPS	40.0		40.0	44.0		44.0	2.3
Air-conditioning							
Residential	682.4		682.4	784.8		784.8	40.3
Commercial	30.1		30.1	33.1		33.1	1.7
Industrial (chillers)	336.4		336.4	370.1		370.1	19.4
Refrigeration							
Domestic		547.6	547.6		602.3	602.3	63.2
Commercial	62.7	308.4	371.1	69.0	339.3	408.2	39.2
Industrial	172.2		172.2	189.4		189.4	9.9
Transport	10.0		10.0	11.0		11.0	0.6
Servicing	1,489.3		1,489.3	1,608.4		1,608.4	85.2
Total	**2,823.2**	**1,884.5**	**4,707.7**	**3,109.8**	**2,073.0**	**5,182.8**	**380.6**

* A discrepancy of 36 ODP tonnes exists between 2009 country programme data and Article 7 data

An overview of the HCFC phase-out strategy

Stage I

12. The baseline level of HCFC consumption is estimated at 355.7 ODP tonnes, based on the average of the 2009 data (Article 7) and the 2010 data (forecasted). The HPMP will address a number of sub-sectors in Stage I (including a phase-out project in one systems house) and include a number of non-investment activities, such as regulatory measures, awareness activities and project management and monitoring activities. Table 3 shows the phase-out to be achieved by sub-sector. Implementation of the phase-out activities in the targeted sectors will lead to the phase-out of 128 ODP tonnes of HCFCs during the 2011-2014 period. The remaining HCFC consumption in eligible manufacturing enterprises would be addressed in Stage II during the 2015-2020 period.

Table 3: Proposed Stage I phase-out to be achieved in the Islamic Republic of Iran by sub-sector

Sector	ODP tonnes
Rigid foam manufacturers producing sandwich panels (13 enterprises)	41.77
Other rigid foam manufacturers and systems house (3)	9.26
Integral skin foam (5)	13.29
Domestic refrigerator manufacturers (4)	7.15
Residential air-conditioner manufactures (39 units)	37.53
Servicing sector	19.00
Total	**128.00**

13. The Islamic Republic of Iran proposes to achieve its HCFC phase-out targets through a combination of supply controls and reduction measures. Priorities include: introduction of zero-ODP and low-GWP alternatives for foam and refrigeration/air-conditioning applications; regulatory measures and enforcement for controlling and monitoring HCFC supply and use; awareness and information outreach to promote the adoption of HCFC-free alternatives; and a reduction in HCFC demand by avoiding waste of HCFCs. The Islamic Republic of Iran also proposes to prioritize enterprises that have not previously undergone conversions by the Multilateral Fund over second conversions.

14. Implementation of the HPMP would commence in 2011 with projects achieving actual phase-out from 2012 at the earliest. Given the forecasted growth in HCFC consumption from 2010 to 2014, particularly in those enterprises, sub-sectors and sectors which are not prioritized for phase-out in Stage I of the HPMP, the HCFC growth up to 2015 is considered in the calculation of the phase-out needed to meet 2013 freeze and 2015 ten per cent reduction.

15. Enabling activities, such as: awareness, regulations enforcement strengthening, capacity building for service agencies to reduce HCFC service demand, will play an important role in ensuring faster implementation of HCFC phase-out projects by enterprises. The Islamic Republic of Iran will therefore introduce the following sub-sector level regulations:

(a) Residential air-conditioning manufacturers will stop using HCFC-22 beginning 1 January 2015. Prohibition of imports of residential air-conditioners using HCFC-22 to be implemented in line with stopping manufacturing;

(b) Integral skin foam manufacturers to stop using HCFC-22 beginning 1 January 2015;

(c) National standards for imported commercial refrigerators, compressors and other equipment; strengthening and implementation of the licensing system for import of HCFCs; licensing of import of HCFC-using products by authorized importers from 1 January 2011; establishment of quotas for importers of HCFCs from 1 January 2013; ban on import and use of HCFC-141b from 1 January 2020, subject to completion of

conversion projects using HCFC-141b in foam applications; ban on import of HCFC blends in refrigeration, air-conditioning and foam applications beginning 1 January 2015 and some other restrictions on HCFC use.

16. Awareness, retrofit, recovery and recycling, and export-import monitoring activities will also be carried out. Project management activities will be overseen by the Ozone Layer Protection Unit (OLPU), with the support of Sub-regional Ozone Units established in the Islamic Republic of Iran.

Stage II

17. The remaining HCFC consumption in eligible manufacturing enterprises would be addressed in Stage II during the 2016-2020 period and would include: the remaining refrigeration and air-conditioning equipment manufacturers in commercial, industrial and transport applications; the remaining manufacturers of HCFC-using sandwich panels, rigid foam and residential refrigeration foam; the remaining manufacturers of commercial and industrial refrigeration foam; and the XPS foam sector. Regulations for sector phase-out would be implemented beginning in 2016 and will be aligned with the adoption of HCFC-free technologies in each sector.

Section 2. Sector plan for foam (Government of Germany and UNIDO)

18. On behalf of the Government of the Islamic Republic of Iran, the Government of Germany as the lead implementing agency for the foam sector, and UNDP, UNEP and UNIDO as cooperating agencies, submitted to the 62nd Meeting, the HCFC phase-out management plan for the foam sector (Foam Sector Plan) at a total cost of US $7,329,000 plus agency support costs of US $652,195 as originally submitted. Implementation of the project will result in the phase-out of 71.47 ODP tonnes (649.7 metric tonnes (mt)) of HCFC-141b, at a cost-effectiveness of US $11.28/kg. The distribution of the funding level among the agencies is as follows:

(a) US $2,612,000 plus agency support costs of US $297,320 for the Government of Germany;

(b) US $264,000 plus agency support costs of US $19,800 for UNDP;

(c) US $20,000 plus agency support costs of US $2,600 for UNEP; and

(d) US $4,433,000 plus agency support costs of US 332,475 for UNIDO.

Background

19. The Foam Sector Plan in the Islamic Republic of Iran will contribute to meeting the 2013 and 2015 HCFC control targets of the Montreal Protocol. In 2009, of the 362.1 ODP tonnes (4,712.7 mt) imported, 205.8 ODP tonnes (1,870.9 mt) were HCFC-141b (representing 56.8 per cent of the total consumption measured in ODP tonnes) and the remaining 156.3 ODP tonnes (2,841.8 mt) were HCFC-22. HCFC-141b is mainly used as a foam blowing agent.

20. Demand for foam-based products has been growing over the last few years. It is estimated that future demand for HCFC-141b for the manufacturing of foam will increase by over 8 per cent a year following overall economic growth, expected to reach 269 ODP tonnes (2,445.5 mt) by 2012. Based on this forecasted consumption, 71 ODP tonnes (645.5 mt) of HCFC-141b would need to be phased out to reach the 2013 and 2015 compliance levels.

21. The Foam Sector Plan's strategy targets conversion of the largest enterprises during phase 1. After these enterprises are converted, the experience gained and lessons learned will be transferred to the smaller enterprises that will be converted in phase 2.

Overview of the foam industry

22. Based on the survey conducted for the preparation of the HPMP, 134 HCFC-141b-based foam enterprises were identified, as shown in Table 4.

Table 4: Overview of HCFC-141b foam enterprises in the Islamic Republic of Iran

Foam application	No. of enterprises	HCFC-141b consumption	
		ODP tonnes	Tonnes
Sandwich panel (non converted)	6	24.4	222.0
Sandwich panel (converted)	3	19.8	180.0
Sandwich panel (not finished projects)	2	7.4	67.0
Sandwich panel (not eligible)	1	2.2	20.0
Discontinuous sandwich panel (non converted)	9	5.9	53.4
Discontinuous sandwich panel (converted)	5	15.7	142.3
Rigid foam (non converted)	1	3.3	30.0
Rigid foam (converted)	12	16.8	152.6
Integral (non converted)	5	4.8	43.5
Integral (converted)	5	9.7	88.5
Commercial refrigeration (non converted)	2	0.2	2.0
Commercial refrigeration (converted)	47	33.7	306.4
Residential refrigeration (non converted)	9	10.1	92.0
Residential refrigeration (converted)	26	50.1	455.6
Systems house	1	3.2	29.2
Total:	134	207.3	1,884.5

23. In total, 185 foam enterprises received assistance from the Multilateral Fund to convert to non-CFC technology (referred to as "converted" in the table above). During the implementation of the National Phase-out Plan, the discontinuous sandwich panel production line of one enterprise (Mammut Co.) was converted to pentane technology; while HCFC-141b is still used for the manufacturing of continuous sandwich panels. Some of the enterprises that were converted to pentane technology are still consuming considerable amounts of HCFC-141b. The largest manufacturer of integral skin foams (Iran Polyurethane, with a total consumption of 42 mt) was converted to pentane technology at a total cost of US $796,230. However, a fire destroyed the production line and the company returned to the use of HCFC-141b (this enterprise is included in the Foam Sector Plan). All second-stage conversion projects will be addressed only at the end of 2013. A few enterprises manufacturing extruded polystyrene foam (XPS) were established after the cut-off date of 21 September 2010. These companies have a consumption of 2.6 ODP tonnes (40 mt) of HCFCs.

24. Raw materials, polyols and isocyanates are imported in bulk from major suppliers (in Germany, Italy, Netherlands, Singapore, South Korea, Spain, Syrian Arab Republic and the United States of America). The imported raw materials are blended with HCFC-141b or pentane at the enterprises.

Technology selection

25. The sector plan and its planned conversion projects are exclusively based on the use of two low-global warming potential (GWP) alternatives, namely hydrocarbon and water-based technologies. From a technical point of view, hydrocarbon-based technologies are mature technologies. However, they can only be introduced in enterprises that have the appropriate organization, space and qualified technical personnel. Requirements include special storage areas, as well as sufficient factory space for proper storage and foaming under controlled temperature conditions. The enterprise's production output must be high enough to amortize the cost of the additional safety measures. The additional foaming equipment (i.e., mould, presses and fixtures) must be sufficiently developed for conversion. It is therefore essential to select enterprises properly, in order to introduce standards for the products and achieve market acceptance of the technology.

Cost of the Foam Sector Plan

26. Phase 1 of the Foam Sector Plan will phase out 71.5 ODP tonnes (649.7 mt) of HCFC-141b used by 25 enterprises, as shown in Table 5. The total requested funding has been calculated just below the cost-efficiency thresholds for low-GWP alternatives, based on established calculation methods. The overall budget includes the costs of the project management unit, training workshops for foam enterprises, technical consultant services, revision of technical standards and formulation, public awareness activities and further strengthening of the policy and regulatory framework. The overall funding costs for the conversion of the enterprises are based on retrofits. In some cases, new production equipment will be required. Additional co-financing will be sought to bridge funding gaps, especially for the introduction of new equipment (the Government of Germany has initiated discussions with KfW Bankengruppe of Germany (a promotional bank under the ownership of the Federal Republic that offers support to sustainable improvement in economic, social, ecological living and business conditions) on potential co-financing of activities).

Table 5: Total cost of the Foam Sector Plan in the Islamic Republic of Iran

Application	No. plants	HCFC-141b		Funding (US $)	CE (US$/kg)
		Tonnes	ODP tonnes		
Continuous sandwich panel	6	222.0	24.4	2,133,420	9.61
Discontinuous sandwich panel	7	157.7	17.4	1,506,035	9.55
Rigid foam	2	55.0	6.1	526,350	9.57
Residential refrigeration	4	65.0	7.2	640,250	9.85
Integral skin	5	120.8	13.3	1,761,264	14.58
System house	1	29.2	3.2	263,676	9.03
Coordination and management				200,000	
Stakeholder coordination/workshops				50,000	
Preparation of standards				30,000	
Implementing a reporting structure				20,000	
Training, monitoring and equipment				200,000	
Total	**25**	**649.7**	**71.5**	**7,330,995**	**11.28**

Implementation modalities

27. The Foam Sector Plan will be carried out by the implementing agencies in cooperation with the Project Management Group. The bilateral and implementing agencies will provide policy support, technical and management assistance for the implementation of the sector plan. Furthermore, the lead agency will supervise and arrange for verification of major activities carried out under the plan. The Project Management Group and the implementing agencies will convene at least twice a year to plan and review the activities to be carried out under the plan.

Section 3. Sector plan in the air conditioning sector (UNDP)

Background

28. The sector plan for HCFC phase-out in the air-conditioning sector in the Islamic Republic of Iran covers residential air conditioners only. Requested funding for the sector phase-out plan is US $10,029,262 plus agency support costs of US $752,195 as originally submitted to the 62nd Meeting. Implementation of the project will result in the phase-out of 682 mt (37.53 ODP tonnes) i.e., 29.6 per cent of the phase-out to be achieved in Stage I of the HPMP.

HCFC-22 consumption

29. There are six large companies which sell a total of 1 million air conditioners in the Islamic Republic of Iran. All except one have international affiliations, rendering them ineligible for support from the Multilateral Fund. There are a further 24 enterprises which assemble and sell from 3,000 to 20,000 air conditioners per year. The estimated consumption in the manufacturing and assembly of these units is about 682 mt (37.5 ODP tonnes) of HCFC-22.

Technology selection

30. According to the analysis of alternatives in the residential air-conditioning sector, hydrocarbons (including HC-290) or HFC-32, were not selected because they have not yet been fully commercialized. HFC-407C and HFC-410A technologies have been used in the refrigeration and air conditioning industry for more than a decade, for which standards exist and components are readily available. With a view to product performance, safety and serviceability, the HPMP proposes to use HFC-410A for the conversion of the residential air-conditioning industry in the Islamic Republic of Iran.

Cost of the air-conditioning sector plan

31. The project proposal focuses on the eligible enterprises, i.e. those enterprises which have no international affiliation. Therefore, the proposal contains the conversion cost for one large manufacturer and 24 small manufacturers. The project proposal contains a list of proposed modifications with regard to manufacturing, product certification, prototype manufacturing, redesign, safety training and technical assistance. For the large manufacturer, US $1 million has been requested for the conversion of manufacturing of heat exchangers. The total cost of the project has been calculated based on the incremental capital costs of the large manufacturer at US $2,332,000 plus incremental operating costs for 532 mt of HCFC-22 at the threshold level of US $6.30. No further information related to the incremental operating costs was provided in the proposal. The cost for the remaining 24 enterprises was generally calculated in the same way, using proposed incremental capital cost and amending it according to the related phase-out. The concept of the proposal for cost calculation was to work with a generic list of necessary changes for all enterprises, resulting in costs of US $122,100 per enterprise, and to multiply this value by the number of enterprises. An overview of costs and associated phase-out is provided in Table 6.

Table 6: Cost of the air-conditioning sector

Enterprises	Total incremental costs (US$)			HCFC-22		CE
	Capital	Operating	Total	(mt)	(ODP t)	(US $/kg)
One large enterprise	2,332,000	3,351,600	5,683,600	532.0	29.3	10.7
24 SMEs	2,930,400	947,646	3,878,046	150.4	8.3	25.8
Total	5,262,400	4,299,246	9,561,646	682.4	37.5	14.0

Section 4. Sector plan in the refrigeration servicing sector (Government of Germany and UNEP)

Background

32. The sector plan for HCFC phase-out in the servicing sector includes a large number of non-investment activities, such as: standards and regulations; awareness-raising; internet-based tools; customs training; training and certification of technicians; and equipment for servicing workshops. The refrigeration servicing sector plan also includes activities to improve the leak tightness of refrigeration equipment in supermarkets. The total funding as requested at the 62nd Meeting was US $1,554,545 plus agency support costs in four tranches from 2011 to 2014.

33. Table 7 below provides an overview of the proposed costs for the activities in the servicing sector from 2011 until 2014 by category.

Table 7: Overview over the costs for service sector activities

Activity	Agency	Cost (US $)
Standards and regulations	UNEP	50,000
Awareness/information campaigning	UNEP	194,545
Development of tools and guidelines for download	Germany	40,000
Stakeholder workshops	Germany	85,000
Training of trainers and Technicians	UNEP	250,000
Training of Custom officers	UNEP	160,000
Certification standards development	Germany	10,000
Technical/management assistance	Germany	160,000
Financial incentives for technology demonstration	Germany	415,000
Monitoring and documentation system, surveys, logbooks	Germany	120,000
National registration inventory	Germany	50,000
Contingencies	UNEP/Germany	20,000
Total		**1,554,545**

Section 5. Overall cost of the HPMP

34. The overall cost of achieving reductions as articulated in Stage I of the HPMP is US $20,207,707, which is fully requested from the Multilateral Fund. Of that amount, US $16,858,162 is foreseen for investment activities and US $3,349,545 for non-investment activities. The summary of the costs is shown in Table 8.

Table 8: Overall cost of the HPMP for the Islamic Republic of Islamic Republic of Iran

Project title	Phase out (ODP tonnes)		Cost (US $)*
	HCFC-22	HCFC-141b	
Rigid foam manufacturers (continuous sandwich panel)		41.77	2,132,000
Rigid foam manufacturers (discontinuous sandwich panel and others)		6.05	2,031,000
Integral skin foam manufacturers		13.29	1,762,000
Domestic refrigeration equipment manufacturer		7.15	640,000
One systems house		3.21	263,900
Foam sector non-investment			280,000
Foam sector project management			220,000
Residential air-conditioning	37.53		10,029,262
Residential air conditioning non-investment			415,000
Service sector (regulations, information, training)	19.00		1,554,545
Project Management Unit			880,000
Total	**56.53**	**71.47**	**20,207,707**

(*) As originally submitted to the 62nd Meeting.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

35. The Secretariat reviewed the HPMP for the Islamic Republic of Iran and the sector phase-out plans 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 60th Meeting (decision 60/44), subsequent decisions on HPMPs made at the 62nd Meeting, the 2011-2014 business plan of the Multilateral Fund submitted to the 63rd Meeting, and the HPMP for the Islamic Republic of Iran including the sub-sector phase-out plans submitted to the 62nd Meeting.

Section 1. HPMP document

Overarching strategy

36. UNDP indicated that the Government of the Islamic Republic of Iran would establish import quotas for HCFCs in line with its Montreal Protocol targets and according to its baseline HCFC consumption. Quota allocations would be determined in consultation with HCFC-22 and HCFC-141b importers and relevant national policies. The quota system, combined with the licensing system and other regulatory controls already initiated by the Islamic Republic of Iran, constitute an important regulatory control for achieving Stage I targets.

37. Referring to funds previously approved at the 55th and 57th Meetings for HPMP preparatory activities, UNDP informed the Secretariat that the funds requested in the HPMP were for finalizing regulations through consultations with national stakeholders and for capacity building to enforce the regulations. Therefore, the activities for which funding is requested in this context in the HPMP are not part of preparation funds. UNDP also noted that funds approved under the national phase-out plan were related to support for phase-out of CFC consumption, not HCFC consumption, and focused on MAC sector servicing support, among other activities. The activities defined under HPMP are specifically designed to address HCFC users and additional activities needed for regulations for achieving HCFC phase-out targets.

38. To meet the 2013 and 2015 phase-out targets, the Government of the Islamic Republic of Iran is proposing to phase out 128.0 ODP tonnes, comprising 71.5 ODP tonnes of HCFC-141b used as a foam blowing agent and 56.5 ODP tonnes of HCFC-22 used in the foam and refrigeration manufacturing and servicing sectors. It was noted that the total amount to be phased out is equivalent to 36.0 per cent of the HCFC baseline estimated in the HPMP (355.7 ODP tonnes). It was also noted that the 2015 control level could be met by addressing only HCFC-141b consumption given that this substance represents 44 per cent of the total HCFC consumption in 2009 according to Article 7 data. In addressing these issues, UNDP provided the following explanation:

(a) The phase-out targets in the HPMP took into account the growth in consumption in the sectors/sub-sectors that could not be addressed in Stage I. Controlling HCFC supply without adequate assistance to the industry using it, would damage the economy, and could result in illegal trade to cater for the high demand. The Government therefore proposed a “constrained growth” approach to strike a balance between the resources and results;

(b) HCFC-141b consumption in foam applications in 2009 constitutes about 34 per cent of total HCFC consumption in terms of mt or 51 per cent in terms of ODP tonnes (based on 2009 Article 7 data). Accordingly, priority has been given to conversion of enterprises manufacturing rigid foam, integral skin foam and domestic refrigeration insulation foam that could introduce low-GWP alternative technologies in the limited timeframe of 2-3 years to meet the 2013 and 2015 targets, cost-effectiveness values in the foam sector (rigid foam and integral skin foam), which are below the threshold limits for these sub-sectors according to decision 60/44, with a 25 per cent increase for adoption of low-GWP technologies.

(c) Additional phase-out requirements would need to be addressed through residential air-conditioner manufacturing applications, since HCFC consumption in the refrigeration servicing sector is experiencing a steady increase on account of manufacturing, assembling and servicing HCFC-22 based refrigeration and air-conditioning equipment. Based on the current annual manufacturing levels of domestic air-conditioner systems (in which some 682 mt (37.5 ODP tonnes) of HCFC-22 are being used), the estimated demand for HCFC-22 for servicing these systems over their 15-year average life would

be over 2,000 mt (110.0 ODP tonnes). Additionally, imports of HCFC-22 based air-conditioners would further increase the amounts of HCFC-22 for servicing. Therefore, addressing the refrigeration manufacturing sector at this stage will reduce the current demand for HCFC-22 in manufacturing and the future demand for servicing this equipment;

(d) The main reason for the inclusion of the refrigeration servicing sector which consumed 1,500 mt (82.5 ODP tonnes) of HCFC-22 in 2009, representing 30 per cent of the total HCFC-22 consumption, as part of Stage I of the HPMP was its unconstrained growth. Enterprises in this sector will require awareness-raising about HCFC phase-out issues, as well as support to reduce HCFC consumption. Furthermore, ongoing engagement of registered servicing sector technicians is essential to avoid any breaks with the previous certification/training/other activities supported during CFC phase-out. Such activities will lead to greater sector participation in HPMP activities with respect to consumption control, training, registration and certification of workshops.

Funding for monitoring and support

39. In reviewing the overall cost of the HPMP, it was noted that costs associated with monitoring, management and technical assistance appeared excessive. In the foam sector plan US $220,000 was requested for management and US $280,000 for stakeholder coordination, workshops, adapting building standards, training and monitoring. In the refrigeration sector plan, US $415,000 is requested for technical assistance, information outreach, awareness and consultative meetings and technical information exchange, in addition to US $714,000 requested for conversion-specific activities related to training and technical assistance. Further, US $880,000 was requested for the project management unit. A number of these expenses appear to constitute double counting.

40. UNDP advised that the Government has decided to introduce only low-GWP alternatives in the foam sector and has proposed substantial activities in the air-conditioning and servicing sectors. These technologies require that the regulatory processes and bodies be in place for their safe and cost-effective use within the limited time frame for the implementation of Stage I. The proposed non-investment activities would support the achievement of HCFC phase-out targets through: faster adoption of HCFC-free technologies, stronger regulation enforcement, continued engagement of national stakeholders on HCFC phase-out in the RAC equipment manufacturing and servicing sector, and a stronger monitoring system to support HCFC phase-out.

41. UNDP indicated that US $880,000 requested for the project management unit is for overall support for HPMP implementation and that the unit would be working directly under the supervision of the NOU. The technical support projects under the foam sector and RAC sector plans are specifically designed to support implementation of the sector / sub-sector level projects and would directly contribute to phase-out. This is therefore, another enabling mechanism rather than double-counting or duplication of efforts.

42. In regard to the estimated cost for the complete phase-out of HCFCs in Islamic Republic of Iran, UNDP explained that while the activities required for complete-phase-out have been identified, their exact costs and costs for implementation of these evolving technologies cannot be assessed at this stage.

Section 2. Sector plan for foam (Government of Germany and UNIDO)

Eligibility of second-stage conversion enterprises

43. During the discussion of the Foam Sector Plan a number of eligibility issues were discussed between the Secretariat and the Government of Germany and UNIDO. These included the following:

(a) The eligibility of enterprises that had been previously converted to pentane technology through the Multilateral Fund but were still using considerable amounts of HCFC-141b (i.e., two enterprises manufacturing sandwich panels consuming 67 mt of HCFC-141b; four companies consuming both HCFC-141b and cyclopentane with a total consumption of 90 mt of HCFC-141b; another company (Mammut Co.) that was previously converted to pentane technology continued manufacturing both continuous and discontinuous panels using both pentane and 180 mt of HCFC-141b as blowing agents). The additional funding being requested would constitute double counting and therefore was not eligible. The Government of Germany indicated that although no funding will be requested, HCFC-141b consumption would need to be included as the enterprises have not been converted properly;

(b) The funding originally requested for the integral foam producer (Iran Polyurethane), which was converted to hydrocarbon technology but had its equipment destroyed by fire (and therefore, not eligible) was withdrawn;

(c) The funding of US $200,000 originally requested for training and monitoring activities for three XPS foam enterprises that were established after the 21 September 2007 cut-off date was subsequently withdrawn.

44. In regard to the justification for second-stage conversions requested under decision 62/16, UNDP indicated that the total HCFC consumption in enterprises that have received assistance from the Fund was 1,325.4 mt in 2009. This amount represented 28 per cent of the total consumption of HCFCs, 41 per cent of consumption of HCFCs in manufacturing applications and 70 per cent of HCFC consumption in foam applications. The foam enterprises included in Stage I of the HPMP. which had received assistance for phasing-out CFC-11 are the following: Behdor Rangin Co. (rigid foam); Nama Sazan Emrooz Co. (continuous panels); Nobugh Sarmayesh Co., Parsin Gostar Jonoub Co., and Yakhchavan Co. (discontinuos panles); amd Royan Polymer Co., and Zivar Khodro Co. (integral skin).

Technology selection

45. The strategy proposed in the Foam Sector Plan was based exclusively on hydrocarbon technology, in spite of the low level of foam production, and the associated low consumption of HCFC-141b at each enterprise. As the enterprises are predominantly small and medium size enterprises (SMEs), with limited technical support and financial resources, the selection of hydrocarbon technology will result in major counterpart contributions (the smaller the enterprises, the greater the need for co-financing). The minutes of a workshop that was held to help prepare the Foam Sector Plan provided insight into the needs of the foam manufacturing enterprises in the Islamic Republic of Iran. Low in capital resources, and lacking leverage with material and equipment suppliers, these enterprises are at high risk of failing to adopt a hydrocarbon-based technology that requires a high level of maintenance. As a strategy to meet the 2013 and 2015 phase-out targets, it was suggested to focus on larger enterprises (with consumption of HCFC-141b of 50 mt or more) that may have the capacity to adopt hydrocarbon technology. For the small and medium-scale manufacturers, the ideal situation to circumvent the numerous problems outlined in the minutes would be to convert to a similar liquid technology that would not require the need for local works and other unforeseen expenditures related to installation of new equipment, and would not require specialized maintenance personnel. Currently, the technology that fits that description is methyl formate, which has been the subject of validation exercises for system-wide use through the Multilateral Fund.

46. The Government of Germany indicated that the state-of-the-art conversion technology in the Islamic Republic of Iran is hydrocarbons, as they have been already used for insulation and integral foam applications, and are being produced locally. The strategy is in place, and a system house in the country has been selected to provide pre-blended hydrocarbon polyols for use by SMEs. Furthermore, the average cost-effectiveness values for each group of foam applications were below the thresholds. The Government will use its flexibility in the implementation of the Foam Sector Plan to achieve a fair and balanced distribution of funds throughout eligible sector enterprises, thus ensuring obligatory conversion of SMEs and avoiding individual companies being disadvantaged. Necessary levels of counterpart contributions have been ensured by the Government in consultations with stakeholders. In regard to methyl formate it was noted that although it has been a known blowing agent for more than 15 years and has been tested extensively, it had not developed in non-Article 5 and Article 5 markets for various reasons and is not a mature technology for the proposed applications. Major raw material suppliers (e.g., Bayer, Elastogran, Dow, Huntsman) do not have appropriate systems for the proposed applications, nor would they recommend methyl formate now or in future, because of its long-known weaknesses for the proposed applications.

47. From the discussions it was concluded that under the current circumstances in the Islamic Republic of Iran hydrocarbon technology would be the most cost-effectiveness one for replacing HCFC-141b as a foam blowing agent, taking also into consideration the potential introduction of pre-blended hydrocarbon based polyol systems.

Methodology for calculating incremental costs

48. Several technical and cost related issues were discussed between the Secretariat and the Government of Germany and UNIDO. These issues included, *inter alia*; the methodology used for calculating the capital costs based on the assumption that all enterprises were of the same size; the limited information provided on the equipment in the baseline, which was necessary to determine the appropriate level of incremental costs for the conversion of the various enterprises; the exclusion of three of the four systems houses in the country, which are supplying polyol systems to a large number of customers (SMEs). All these issues were satisfactorily addressed. The agreed level of funding is presented in Table 9. An additional US $225,500 was agreed for UNDP to cover equipment and technical assistance for one systems house to manufacture pre- aliphatic (methyl formate, methylal) pre-blended polyol systems that would be provided to a large number of small foam enterprises.

Table 9: Agreed funding level for the Foam Sector Plan

Application	Agency	No. enterprises	HCFC to be phased out		CE (US$/kg)	Funding (US $)
			mt	ODP tonnes		
Continuous panels	Germany	6	222.0	24.4	7.77	1,725,240
Discontinuous panels	UNIDO	7	157.7	17.3	8.08	1,273,897
Integral Skin	UNIDO	4	69.0	7.6	12.18	840,105
Rigid foam	UNIDO	2	55.0	6.1	6.87	377,575
Domestic refrigeration	UNIDO	4	65.0	7.2	8.71	565,825
Technical assistance	Germany					280,000
Total		**23**	568.7	62.6	8.90	5,062,642

Section 3. Sector plan in the air conditioning sector (UNDP)

49. The HPMP foresees for the entire air conditioning sector a conversion from the use of HCFC-22 to HFC-410A. The sector relies on imported components, in particular compressors, which are currently not available for technologies other than HFC-410A. Based on the additional information provided by UNDP (including a complete list of enterprises and their location), the Secretariat was able to analyze and assess the eligibility and incremental cost related to the conversion of the air conditioning sector in the country. Several issues were raised with UNDP, including the conversion of heat exchanger manufacturing for the single large enterprise, and associated reduction in energy consumption; the

Secretariat advised to continue with the existing practice of using the quality of components as a measure for the baseline, indicating that as long as no technical changes to the heat exchanger are necessary, heat exchanger conversions are not eligible. It was noted that in the past vacuum pumps only need to be retrofitted and not purchased new; the need for charging boards (which were a substantial cost item in the project costs provided), were necessary in companies where charging using a balance or charging by measuring the temperature changes in the refrigeration equipment was not suitable due to mass production and time constraints (these two items covered 90 per cent of the total investment cost for small enterprises). All these issues were satisfactorily addressed. The agreed level of funding is presented in Table 10.

Table 10: Agreed funding level for the Sector plan in the air conditioning sector

Enterprises	Incremental costs (US$)			HCFC-22		CE
	Capital	Operating	Total	mt	ODP tonnes	(US $/kg)
One large enterprise	506,000	3,354,246	3,860,246	532.0	29.3	7.26
24 SMEs	976,800	945,000	1,921,800	150.4	8.3	12.78
Sub-total	1,482,800	4,299,246	5,782,046			
Technical assistance	-	-	90,000			
Total	-	-	5,872,046	682.4	37.5	8.47

Section 4. Sector plan in the refrigeration servicing sector (Government of Germany and UNEP)

50. In regard to the activities proposed to address HCFC consumption in the servicing sector, the Secretariat noted with interest the innovative approaches proposed by the Government of Germany (as the lead agency for the servicing sector), in cooperation with UNEP. The supermarket programme proposed is aimed at improving the leak tightness of refrigeration equipment in five supermarkets, and providing tools to 40 service enterprises to allow immediate replication of the experiences and results of the leak reduction programme. However, it also noted that, in accordance with decision 60/44, activities in the servicing sector can only be supported in a limited manner for a non-LVC country in the event that insufficient levels of HCFCs could be phased out in the manufacturing sector to enable the first reductions to be met. The Secretariat further pointed to the fact that the desired effect of widespread use of leak reduction measures in supermarkets could not be achieved in time for the 2013 and 2015 compliance measures. Germany replied by underlining the long-term importance of the effect sought.

51. The Government of Germany pointed to the need for a servicing sector project because of the implementation structure established under the national CFC phase-out plan. Disruption of these working relationships would result in uncontrolled growth in the servicing sector. Furthermore, since the control of HCFC-containing equipment is not mandatory under the Montreal Protocol, commercial importers will not accept such controls, so leading to a further increase in HCFC-22-containing equipment, and a consequent increase in the demand for servicing. Activities in the servicing sector could reduce HCFC-22 consumption by 345 mt (19 ODP tonnes) based on experience gained in introducing better servicing practices for refrigeration and air-conditioning equipment. Consequently, and given significant growth in the servicing sector, Germany maintained that the proposed programme would be meaningful and important for the Islamic Republic of Iran and should be given priority.

52. In regard to the inclusion of standards to check the quality of imported refrigeration equipment until 2013, and whether standard development would be eligible for funding, the Government of Germany responded that these standards, once developed, would be used to prepare inspection guidelines for customs and affiliated laboratories, as well as help monitor imports and enforce any import bans. In regard to the funding for awareness and information campaigning, it was indicated that 11 awareness workshops for industry associations and Government officials would be carried out, information packages explaining the HCFC phase-out would be provided, and that two short videos covering the refrigeration and air-conditioning, refrigerator and foam sectors would be produced in the Persian language.

53. The proposed servicing sector plan indicated that activities in the refrigeration and air conditioning servicing sector included in Stage I of the HPMP will be critical to ensure compliance with the 2013 and 2015 control measures as these activities will contribute to reducing or even reversing the growth in HCFC-22 consumption. Not addressing the refrigeration and air conditioning servicing sector at this point would mean dismantling until 2015 a very effective structure established during the implementation of the NPP that was instrumental in achieving effectively the sustained phase-out of CFCs that were used in the sector. The approach to reduce servicing sector emissions by establishing a leak search and repair programme is innovative and has potential to contribute significantly to the reduction of HCFC-22 consumption.

54. As explained above, UNEP and the Government of Germany had originally proposed not only activities to maintain the infrastructure for service sector implementation established by CFC phase-out projects, but had also added a number of innovative non-investment activities, in particular a concerted and targeted approach to reduce HCFC-22 use by improving the service quality and leak tightness for medium and large size refrigeration equipment. Despite recognition of the potential benefits of such an approach, the Secretariat was unable to agree to those requests because of the specifics of decision 60/44(f)(xv), through which Article 5 countries with HCFC consumption in the refrigeration service sector above 360 mt (such as the Islamic Republic of Iran), should first address consumption in the manufacturing sector to meet the reduction steps in 2013 and 2015. However, funding would be allowed “if such countries clearly demonstrate that they require assistance in the refrigeration servicing sector to comply with these targets, funding for these activities...". The activities proposed for the manufacturing sectors in the project for the Islamic Republic of Iran are clearly sufficient to meet the reduction in HCFC consumption up to and including the 2015 control target. The Secretariat could therefore only agree to a reduced programme for the service sector, in order to maintain the institutional capacities created during CFC phase-out for use in implementation post 2015.

55. Based on above considerations the Secretariat recommended US $265,000 as the total funding level for Stage I of the sector plan in the refrigeration servicing sector.

Section 5. Overall cost of the HPMP

56. The level of funding agreed between the Secretariat and relevant implementing agencies for the implementation of Stage I of the HPMP for the Islamic Republic of Iran is US $11,815,188 with an overall cost-effectiveness of US $9.01/kg, as shown in Table 11.

Table 11: Overall cost of the HPMP for the Islamic Republic of Islamic Republic of Iran

Description	Agency	HCFCs to be phased out		Funding (US$)	CE (US$/kg)
		HCFC-22	HCFC-141b		
Foam (continuous panels)	Germany		24.40	1,725,240	7.78
Foam (discontinuous panels)	UNIDO		17.40	1,273,897	8.05
Foam (integral skin)	UNIDO		7.60	840,105	12.16
Foam (rigid)	UNIDO		6.10	377,575	6.81
Foam (domestic refrigeration)	UNIDO		7.20	565,825	8.64
One systems house	UNDP			225,500	
Technical assistance (foam)	Germany			280,000	
Residential air-conditioning	UNDP	37.50		5,872,046	8.61
Service sector	UNEP	3.24		265,000	4.50
Project Management Unit	UNDP			390,000	
Total		40.74	62.70	11,815,188	9.01

57. UNDP indicated that a number of co-financing opportunities would be explored for HPMP implementation, including opportunities for integrating HCFC phase-out project initiatives with related initiatives (e.g., energy efficiency in air-conditioning applications, building codes and standards) supported through other financial mechanisms; in-kind support from the Government (human resources,

infrastructure); phase-out by non-eligible enterprises; and concessional lending support from international financial institutions. Other examples which could be considered as "co-financing" for the HPMP include the costs incurred by industry and consumers due to non-availability of full support for conversion in the refrigeration and air-conditioning sector; additional investments needed during conversion to HCFC-free alternatives that may not be eligible under the Multilateral Fund guidelines; management support time from other line ministries and authorities; and industry initiatives for training and technical support for HCFC-free alternatives.

2011-2014 business plans

58. Table 12 shows the level of funding and amounts of HCFCs to be phased out according to the 2011-2014 business plan of the Multilateral Fund submitted to the 63rd Meeting. The level of funding requested for the implementation of the Stage I of the HPMP of US $12,796,086 (i.e., US $11,815,188 for projects plus agency support costs of US $ 980,898) is below that of the 2011-2014 business plan (US $14,718,162). The difference is related to funding for phase-out activities in the foam sector where the business plan from the Government of Germany was based on the level of funding requested when the project was first submitted to the 62nd Meeting.

Table 12: 2011-2014 business plan of the Multilateral Fund

Agency	2011	2012	2013	2014	2015	Total
Funding (US$)						
Germany	2,200,000	1,650,000	-			3,850,000
UNDP	3,224,998	2,220,730	1,528,390			6,974,118
UNEP	692,130	200,580	120,970			1,013,680
UNIDO	2,880,814	-	-			2,880,814
Total	8,997,942	4,071,310	1,649,360			14,718,612
Phase-out (ODP tonnes)						
Germany	-	26.5	20.2	-	-	46.7
UNDP	-	16.5	12.2	8.8	-	37.5
UNEP	115.8					115.8
UNIDO		32.2				32.2
Total	115.8	75.2	32.4	8.8		232.3

Impact on the climate

59. A calculation of the impact on the climate of HCFC consumption through the investment components of stage I of the HPMP in the Islamic Republic of Iran based on the GWP values of the HCFCs and alternative substances introduced and their level of consumption before and after conversion is presented in Table 13 (foam sector) and Table 14 (air conditioning sector).

Table 13: Impact on the climate

Substance	GWP	Tonnes/year	CO_2-eq (tonnes/year)
Before conversion			
HCFC-141b	713	570.0	406,410
HCFC-22	1,780	740.7	1,318,495
Total before conversion		1,310.7	1,724,905
After conversion			
Cyclopentane	25	370.5	9,263
HFC-245fa			-
Total after conversion	25	370.5	9,263
Net impact			(1,715,642)

Table 14: Results of the Multilateral Fund Climate Impact Indicator for the air-conditioning sector

Input				
	Generic		Window air conditioner	Room air conditioner
	Country	[-]	**Islamic Republic of Iran**	
	Company data (name, location)	[-]	**RAC Sector Plan**	
	Select system type	[list]	Domestic AC onsite assembly	Domestic AC factory assembly
	General refrigeration information			
	HCFC to be replaced	[-]	HCFC-22	
	Amount of refrigerant per unit	[kg]	1.20	1.20
	No. of units	[-]	409,000	409,000
	Refrigeration capacity	[kW]	2.9	2.9
	Selection of alternative with minimum environmental impact			
	Share of exports (all countries)	[%]	-	-
	Calculation of the climate impact			
	Alternative refrigerant (more than one possible)	[list]	HFC-410A	HFC-410A

NOTE

All data displayed is specific to the case investigated and is not generic information about the performance of one alternative; performance can differ significantly depending on the case.

Output	*Note: The output is calculated as the climate impact of the refrigerant systems in their life time as compared to HCFC-22, on the basis of the amount produced within one year. Additional/different outputs are possible*			
			Window air conditioner	Room air conditioner
	Country		**Islamic Republic of Iran**	
	Identification of the alternative technology with minimum climate impact			
	List of alternatives for identification of the one with minimum climate impact	[Sorted list, best = top (% deviation from HCFC)]	HC-600a (-52%)	HC-600a (-43%)
			HC-290 (-50%)	HC-290 (-63%)
			HFC-134a (-11%)	HFC-134a (-41%)
			HFC-407C (-2%)	HFC-407C (-9%)
			HCFC-22	**HCFC-22**
			HFC-410A (4%)	HFC-410A (5%)
	Calculation of the climate impact			
	Per unit, over lifetime (for information only):			
			HCFC-22	HCFC-22
	Energy consumption	[kWh]	2,493,014,160	2,387,364,972
	Direct climate impact (substance)	[kg CO_2 equiv]	1,305,872	906,115
	Indirect climate impact (energy): In country	[kg CO_2 equiv]	1,338,114	1,281,407
	Indirect climate impact (energy): Global average	[kg CO_2 equiv]	-	-
	Calculation of the climate impact of the conversion		Window air conditioner	Room air conditioner
	Selected refrigerant		**HFC-410A**	**HFC-410A**
	*Total direct impact (post conversion – baseline)**	*[t CO_2 equiv]*	*35,313.0*	*24,503.0*
	*Indirect impact (country)***	*[t CO_2 equiv]*	*79,906.0*	*77,476.0*
	*Indirect impact (outside country)***	*[t CO_2 equiv]*	-	-
	Total indirect impact	*[t CO_2 equiv]*	*79,906.0*	*77,476.0*
	Total impact of the selected refrigerant	***[t CO_2 equiv]***	**115,219**	**101,979**
	Alternative refrigerant		**HC-290**	**HC-290**
	*Total direct impact (post conversion – baseline)**	*[t CO_2 equiv]*	*(1,299,910)*	*(901,978)*
	*Total indirect impact (country)***	*[t CO_2 equiv]*	*(13,384)*	*7,356*
	*Total indirect impact (outside country)***	*[t CO_2 equiv]*	-	-
	*Total indirect impact***	*[t CO_2 equiv]*	*(13,384)*	*7,356*
	Total impact of alternative refrigerant	***[t CO_2 equiv]***	**(1,313,294)**	**(894,622)**

*Direct impact: Different impact between alternative technology and HCFC technology for the substance-related emissions.

**Indirect impact: Difference in impact between alternative technology and HCFC technology for the energy-consumption-related emissions of CO_2 when generating electricity.

60. The total impact of the refrigerant selection on the climate calculated with the MCII is an increase in climate relevant emissions by, 271,198 tonnes of CO_2 equivalent, or 5 per cent. Other alternative technologies would have the potential to reduce the impact on the climate by 2,207,916 tonnes of CO_2 equivalent. However, UNDP pointed out that at this point in time HFC-410A is the only alternative technology that could be proposed, since the availability of components for technologies other than HFC 410A remains as yet uncertain.

Draft Agreement

61. A draft Agreement between the Government of the Islamic Republic of Iran and the Executive Committee for phase-out of consumption of HCFCs is contained in Annex I to the present document.

RECOMMENDATION

62. The HPMP for the Islamic Republic of Iran is submitted for individual consideration. The Executive Committee may wish to consider:

(a) To approve, in principle, Stage I of the HCFC phase-out management plan (HPMP) for the Islamic Republic of Iran, at the amount of US $12,808,240, comprising US $6,487,546, plus agency support costs of US $486,566 for UNDP, US $212,000, plus agency support costs of US $27,560 for UNEP, US $2,679,827, plus agency support costs of US $200,987 for UNIDO and US $2,435,815, plus agency support costs of US $277,939 for the Government of Germany;

(b) To note that the Government of the Islamic Republic of Iran had agreed at the 63rd Meeting to establish as its starting point for sustained aggregate reduction, the estimated baseline of 355.7 ODP tonnes, calculated using actual consumption reported in 2009 under Article 7 of 312.4 ODP tonnes and estimated consumption for 2010 of 399.0 ODP tonnes;

(c) To deduct 103.44 ODP tonnes of HCFCs from the starting point for sustained aggregate reduction in HCFC consumption;

(d) To approve the Agreement between the Government of the Islamic Republic of Iran and the Executive Committee for the reduction in consumption of HCFCs, as contained in Annex I to the present report;

(e) To request the Secretariat, once the baseline data were known, to update Appendix 2-A to include the Agreement with the figures for maximum allowable consumption, and to notify the Executive Committee of the resulting levels of maximum allowable consumption accordingly; and

(f) To approve the first implementation plan for 2011-2012, and the first tranche of the HPMP for the Islamic Republic of Iran at the amount of US $7,317,791, comprising US $3,000,000, plus agency support costs of US $225,000 for UNDP, US $202,000, plus agency support costs of US $26,260 for UNEP, US $2,409,827, plus agency support costs of US $180,737 for UNIDO and US $1,143,489, plus agency support costs of US $130,478 for the Government of Germany.

Annex I

DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF THE ISLAMIC REPUBLIC OF IRAN 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 the Islamic Republic of Iran (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 320.1 ODP tonnes for 2015 under the Montreal Protocol reduction schedule prior to 1 January 2015 in compliance with Montreal Protocol schedules.

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) 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 rows 4.1.3 and 4.2.3.

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 (the "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 (the "Funding Approval Schedule").

4. The Country will meet the consumption limits for each of the Substances as indicated in Appendix 2-A. It will also accept independent verification, to be commissioned by the relevant bilateral or implementing agency, of achievement of these consumption limits 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 (the "Format of Tranche Implementation Report and Plan") 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 (the "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 (the "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. UNDP has agreed to be the lead implementing agency (the "Lead IA") and UNEP, UNIDO and the Government of Germany have agreed to be cooperating agencies 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 IA 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 agencies to ensure appropriate timing and sequence of activities in the implementation. The cooperating agencies 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 agencies 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 coordination meetings. The Executive Committee agrees, in principle, to provide the Lead IA and the cooperating agencies with the fees set out in rows 2.2, 2.4, 2.6 and 2.8 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, the Lead IA and the cooperating agencies to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the cooperating agencies 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	173.3
HCFC-141b	C	I	182.4
Total			**355.7**

APPENDIX 2-A: THE TARGETS, AND FUNDING

	Particulars	2011	2012	2013	2014	2015	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	n/a	355.7	355.7	320.1	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	n/a	355.7	355.7	320.1	n/a
2.1	Lead IA UNDP agreed funding(US $)	3,000,000	2,095,800	728,746		663,000	6,487,546
2.2	Support costs for Lead IA(US $)	225,000	157,185	54,656		49,725	486,566
2.3	Cooperating IA UNEP agreed funding (US $)	202,000				10,000	212,000
2.4	Support costs for Cooperating IA (US $)	26,260				1,300	27,560
2.5	Cooperating IA UNIDO agreed funding (US $)	2,409,827				270,000	2,679,827
2.6	Support costs for Cooperating IA (US $)	180,737				20,250	200,987
2.7	Cooperating agency Germany agreed funding (US $)	1,143,489	1,054,326			238,000	2,435,815
2.8	Support costs for Cooperating agency (US $)	130,478	120,304			27,157	277,939
3.1	Total agreed funding (US $)	6,755,316	3,150,126	728,746		1,181,000	11,815,188
3.2	Total support cost (US $)	562,475	277,489	54,656		98,432	993,052
3.3	Total agreed costs (US $)	7,317,791	3,427,615	783,402		1,279,432	12,808,240
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this agreement (ODP tonnes)						43.6
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)						-
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)						129.7
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this agreement (ODP tonnes)						65.7
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)						-
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)						116.7

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval not earlier than the first 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 lead implementing agency; 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 the National Ozone Unit (NOU).

2. The consumption will be monitored based on official import and export data for the substances recorded by relevant Government departments and cross-checking the data collected from relevant government departments with data collected from the relevant importers, distributors and consumers.

3. The NOU will also 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 agencies;

(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 agencies, 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 co-ordinating implementing agencies, the allocation of the reductions to the different budget items and to the funding of each implementing or bilateral agency involved. Co-ordinating implementing agencies are defined as cooperating agencies with the role of a lead agency for one or several sectors, as specified in the formal agreement between lead and cooperating agencies specified in paragraph 10 of this agreement.;

(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 AGENCIES

1. The cooperating agencies 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 agencies, 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 $216 per ODP tonne 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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