



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/84/51
1 December 2019

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-fourth Meeting
Montreal, 16–20 December 2019

PROJECT PROPOSALS: IRAN (ISLAMIC REPUBLIC OF)

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

Phase-out

HCFC phase-out management plan (stage I) (annual progress report)

UNDP, UNEP, UNIDO and
Germany

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

UNDP, UNEP, UNIDO,
Germany, and Italy

Stage I of the HPMP for Iran (Islamic Republic of)

Background

1. At the 83rd meeting, on behalf of the Government of the Islamic Republic of Iran, UNDP as the lead implementing agency, submitted¹ the final progress report on the implementation of the work programme associated with the fourth tranche of stage I of the HCFC phase out management plan (HPMP).²
2. Further to a discussion, the Executive Committee noted the progress report and requested the Government, UNDP, UNEP, UNIDO and the Government of Germany to submit a revised project completion report (PCR), including the final disbursement for stage I and any balance to be returned to the Multilateral Fund; and detailed information on the actions taken to ensure that specific equipment or components that had been replaced had in fact been destroyed or rendered unusable, in line with decision 22/38(c) (decision 83/23).
3. Subsequent to the 83rd meeting, the Government of the Islamic Republic of Iran submitted, online, a revised PCR, in line with decision 83/23(b). In addition, the Government resubmitted the final progress report on the implementation of the work programme associated with the fourth and final tranche of stage I providing updated information on HCFC consumption, the regulatory framework and financial information; and the request for funding the second tranche of stage II of the HPMP.

HCFC consumption

4. The Government of the Islamic Republic of Iran reported a consumption of 162.96 ODP tonnes of HCFC in 2018, which is 57.2 per cent below the HCFC baseline for compliance, and 38.8 per cent below the annual consumption target (266.35 ODP tonnes) stipulated in its Agreement for stage II with the Executive Committee. The 2014-2018 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in the Islamic Republic of Iran (2014-2018 Article 7 data)

| HCFC | 2014 | 2015 | 2016 | 2017 | 2018 | Baseline |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Metric tonnes | | | | | | |
| HCFC-22 | 2,666.78 | 2,783.22 | 2,922.89 | 2,120.28 | 1,810.64 | 2,974.55 |
| HCFC-141b | 1,777.00 | 1,420.00 | 1,020.18 | 1,024.08 | 576.12 | 1,971.82 |
| Total (mt) | 4,443.78 | 4,203.22 | 3,943.07 | 3,144.96 | 2,386.76 | 4,945.80 |
| ODP tonnes | | | | | | |
| HCFC-22 | 146.67 | 153.08 | 160.76 | 116.62 | 99.59 | 163.60 |
| HCFC-141b | 195.47 | 156.20 | 112.22 | 112.65 | 63.37 | 216.90 |
| Total (ODP tonnes) | 342.14 | 309.28 | 272.98 | 229.28 | 162.96 | 380.50 |

5. Since the beginning of the implementation of HCFC phase-out activities, fluctuations in the national economy, triggered by international sanctions have restricted the country's access to the supply chain of HCFCs, raw material and equipment required for the conversion to alternative technologies, and has also resulted in price increases. The significant decrease in HCFC consumption from 2017 to 2018, particularly in the case of HCFC-141b, was exacerbated by the most recent economic downturn. The slowdown is believed to be temporary, and as the economic situation stabilizes, it is expected that consumption will return to higher levels, as predicted in the stage II proposal.

¹ UNEP/OzL.Pro/ExCom/83/11

² The fourth and final tranche of stage I of the HPMP was approved at the 74th meeting at a total cost of US \$885,977, consisting of US \$250,430 plus agency support costs of US \$18,872 for UNDP, US \$274,827 plus agency support costs of US \$20,612 for UNIDO and US \$288,582 plus agency support costs of US \$32,744 for the Government of Germany.

6. Notwithstanding the national economic constraints, the activities related to the conversion of over 18 foam enterprises using HCFC-141b as a blowing agent; the conversion of one air-conditioning (AC) manufacturing enterprise resulting in the phase-out of HCFC-22, and the training and technical assistance in the refrigeration servicing sector, have largely contributed to the sustained phase-out of HCFCs. Once the economic situation stabilizes, it would be expected an increase in the consumption of the alternative technologies that have been phased in in all the manufacturing enterprises.

Country programme (CP) implementation report

7. The Government of the Islamic Republic of Iran reported HCFC sector consumption data under the 2018 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Legal framework

8. The HCFC import and export licensing and quota system continues to be operational and is the basis for the establishment of the annual import quotas for HCFC imports; the National Ozone Unit (NOU) approves importers and quantities, and the Ministry of Industry, Mines and Trade (MIMT) issues the import licenses to registered importers. The established regulatory framework for HCFC phase-out also includes the provision of fiscal incentives, a harmonized customs code system and labelling requirements for products containing ODS as well as an “ozone friendly” label for those products converted to non-ODS technology.

9. In March 2018, the national ODS regulation³ was amended to impose a ban on the import of HCFC-22-based equipment to align with the accelerated phase-out of HCFCs. No new manufacturing capacity based on HCFC-22 will be allowed in the country from 1 January 2020.

Progress report of stage I of the HPMP

10. All activities under stage I of the HPMP for the Islamic Republic of Iran have been successfully completed, as reported below.

Regulatory measures

11. The NOU continued to issue licenses for imports of ODS and ODS-containing equipment. A new online system introduced by the customs department has expedited the import license request process, increased the accuracy and reliability of the data and prevented illegal trade.

12. The ban on imports of HCFC-22-based residential air conditioners was established in 2018.

Manufacturing sector

13. The following activities were successfully completed during stage I:

- (a) Conversion of seven polyurethane (PU) foam enterprises in the continuous panel sector to hydrocarbon (HC) technology, phasing out 27.8 ODP tonnes of HCFC-141b (Government of Germany);⁴
- (b) Conversion of 11 rigid PU foam enterprises in domestic refrigeration and discontinuous

³ The ODS (Regulation and Control) Amendment Rules 2018/Sub-paragraph 84 approval letter no. 168964 of the Cabinet of the Islamic Republic of Iran.

⁴ One additional enterprise consuming 2.9 ODP tonnes of HCFC-141b stopped manufacturing foam. The associated funding will be deducted from the second tranche of stage II of the HPMP, in line with decision 80/21.

panels to HC technology, phasing out 88.1 ODP tonnes of HCFC-141b (UNIDO); and

- (c) Conversion of one air-conditioning (AC) manufacturing enterprise to R-410A, phasing out 29.3 ODP tonnes of HCFC-22 (UNDP).

Refrigeration servicing sector (Government of Germany and UNEP)

14. During stage I, the following activities in the refrigeration and air-conditioning (RAC) servicing sector have been completed: training and awareness workshops on HCFC regulations and enforcement for more than 400 customs and enforcement officers; training in good servicing practices in several provinces provided to over 750 technicians; awareness workshops on good practices and energy efficiency for more than 150 technicians; demonstration of sealed, leakage-free refrigeration systems in two supermarket chains; training in managing log books for servicing enterprises and supermarkets; and production and distribution of technical publications to stakeholders.

Level of fund disbursement

15. In line with decision 83/23, the Government of the Islamic Republic of Iran has submitted a final financial report on the funding approved for stage I. As at September 2019, of the US \$9,994,338 approved, US \$9,729,843 had been disbursed, as shown in Table 2.

Table 2. Financial report of stage I of the HPMP for the Islamic Republic of Iran

| Agency | Approved (US \$) | Disbursed (US \$) | Disbursement rate (%) |
|-----------------------|------------------|-------------------|-----------------------|
| UNDP | 4,340,246 | 4,340,246 | 100 |
| UNIDO | 2,506,277 | 2,241,782 | 90 |
| Government of Germany | 2,885,815 | 2,885,815 | 100 |
| UNEP | 262,000 | 262,000 | 100 |
| Total | 9,994,338 | 9,729,843 | 97 |

16. Out of the balance of US \$264,495 from UNIDO, a total of US \$238,258 will be disbursed by the end of November 2019, and the balance of US \$23,846 will be returned to the Multilateral Fund at the 85th meeting. Moreover, UNIDO already returned a balance of US \$12,059 from the first tranche of stage I at the 81st meeting, and will return a balance of US \$2,391 from the third tranche at the 84th meeting.

Secretariat's comments

Implementation of activities included in stage I

17. The Secretariat notes that the licensing and quota system has been enforced and strengthened through the online system.

18. With regard to the projects related to the conversion of manufacturing enterprises, the Secretariat notes that throughout the implementation of stage I, several of the enterprises that were verified and included in the HPMP as originally approved, withdrew their participation mainly due to the economic constraints prevailing in the country. In most cases, the relevant bilateral and implementing agencies were able to identify other enterprises that fulfilled all the funding eligibility criteria under the Multilateral Fund, and incorporated under stage I of the HPMP, at no additional cost to the Fund. Except for one enterprise,⁵ detailed records on the level of consumption of HCFCs and the detailed calculations on the conversion costs associated with those enterprises were provided to the Executive Committee.

⁵ Decision 80/21. This issue is discussed under the request of the second tranche of stage II of the HPMP, contained in the present document.

19. The Secretariat also notes that all activities in the RAC servicing sector that were included in stage I have been completed.

Resubmission of the project completion report

20. The Secretariat reviewed the revised PCR submitted by the Government of the Islamic Republic of Iran. In line with decision 22/38(c), the PCR included the list of equipment destroyed upon conversion of the AC and the 18 PU foam manufacturing enterprises. For the AC project, the charging machine was retrofitted, the vacuum pumps and the equipment used for leak detection were decommissioned. With regard to PU foam, three foam machines were retrofitted; for the remaining 16 foaming machines that could not be retrofitted, the mixing heads and programmable logic controllers were destroyed and the pipes and electrical wiring were cut; and fixtures and mixing tanks were also destroyed. The PCR also included a financial report with fund balances from the first, third and last tranches returned or to be returned to the Multilateral Fund.

Secretariat's recommendation

21. The Executive Committee may wish:

- (a) To note:
 - (i) The final progress report on the implementation of the work programme associated with the fourth tranche of stage I of the HCFC phase-out management plan (HPMP) for the Islamic Republic of Iran, submitted by UNDP, and contained in document UNEP/OzL.Pro/ExCom/84/51;
 - (ii) That the Government of the Islamic Republic of Iran, UNDP, UNIDO, UNEP and the Government of Germany have submitted a revised project completion report in line with decision 83/23;
 - (iii) That UNIDO will return to the 84th meeting a balance of US \$2,391, plus agency support cost of US \$180 from the third tranche of stage I of the HPMP; and
- (b) To request UNIDO to return, no later than the 85th meeting, any remaining balances of funds approved for stage I of the HPMP for the Islamic Republic of Iran.

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

| | | | |
|--------------------------------|--|-------------------------|------------------------|
| (I) PROJECT TITLE | AGENCY | MEETING APPROVED | CONTROL MEASURE |
| HCFC Phase-Out Plan (Stage II) | UNDP (lead), UNEP, UNIDO, Germany, Italy | 77 th | 75% by 2023 |

| | | |
|---|------------|---------------------|
| (II) LATEST ARTICLE 7 DATA (Annex C Group I) | Year: 2018 | 162.96 (ODP tonnes) |
|---|------------|---------------------|

| | | | | | | | | | |
|--|---------|-------|---------------|---------------|-----------|---------|---------------|-------------------|--------------------------|
| (III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes) | | | | | | | | Year: 2018 | |
| Chemical | Aerosol | Foam | Fire fighting | Refrigeration | | Solvent | Process agent | Lab use | Total sector consumption |
| | | | | Manufacturing | Servicing | | | | |
| HCFC-22 | | 1.59 | | 38.04 | 59.95 | | | | 99.59 |
| HCFC-141b | | 11.83 | | 51.53 | | | | | 63.36 |

| | | | |
|--|--------|--|--------|
| (IV) CONSUMPTION DATA (ODP tonnes) | | | |
| 2009 - 2010 baseline: | 380.50 | Starting point for sustained aggregate reductions: | 380.50 |
| CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes) | | | |
| Already approved: | 308.76 | Remaining: | 71.74 |

| | | | | | |
|--------------------------|----------------------------|-------------|-------------|-------------|--------------|
| (V) BUSINESS PLAN | | 2019 | 2020 | 2021 | Total |
| UNDP | ODS phase-out (ODP tonnes) | 22.93 | 18.81 | 6.68 | 48.42 |
| | Funding (US \$) | 1,705,559 | 1,399,539 | 496,727 | 3,601,825 |
| UNEP | ODS phase-out (ODP tonnes) | 2.73 | 2.45 | 0 | 5.18 |
| | Funding (US \$) | 213,614 | 191,129 | 0 | 404,743 |
| UNIDO | ODS phase-out (ODP tonnes) | 8.40 | 7.54 | 6.44 | 22.38 |
| | Funding (US \$) | 624,880 | 560,680 | 478,973 | 1,664,533 |
| Germany | ODS phase-out (ODP tonnes) | 13.00 | 4.10 | 8.60 | 25.70 |
| | Funding (US \$) | 1,025,189 | 317,426 | 666,018 | 2,008,633 |
| Italy | ODS phase-out (ODP tonnes) | 7.25 | 0 | 0 | 7.25 |
| | Funding (US \$) | 565,000 | 0 | 0 | 565,000 |

| | | | | | | | | | | | |
|--|---------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| (VI) PROJECT DATA | | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Montreal Protocol consumption limits | | | 342.45 | 342.45 | 342.45 | 342.45 | 247.33 | 247.33 | 247.33 | 247.33 | n.a. |
| Maximum allowable consumption (ODP tonnes) | | | 342.45 | 342.45 | 266.35 | 266.35 | 247.33 | 247.33 | 247.33 | 95.13 | n.a. |
| Agreed funding (US \$) | UNDP | Project costs | 1,298,170 | 0 | 1,593,980 | | 1,307,980 | 464,231 | 241,000 | 0 | 4,905,361 |
| | | Support costs | 90,872 | 0 | 111,579 | | 91,559 | 32,496 | 16,870 | 0 | 343,375 |
| | UNEP | Project costs | 200,000 | 0 | 190,000 | | 170,000 | 0 | 140,000 | 0 | 700,000 |
| | | Support costs | 24,857 | 0 | 23,614 | | 21,129 | 0 | 17,400 | 0 | 87,000 |
| | UNIDO | Project costs | 473,567 | 0 | 584,000 | | 524,000 | 447,638 | 74,000 | 0 | 2,103,205 |
| | | Support costs | 33,150 | 0 | 40,880 | | 36,680 | 31,335 | 5,180 | 0 | 147,224 |
| | Germany | Project costs | 645,500 | 0 | *1,047,035 | | 285,009 | 598,000 | 96,860 | 0 | 2,672,404 |
| | | Support costs | 73,420 | 0 | *119,092 | | 32,417 | 68,018 | 11,017 | 0 | 303,964 |
| | Italy | Project costs | 403,203 | 0 | 504,004 | | 0 | 0 | 0 | 0 | 907,207 |
| | | Support costs | 48,797 | 0 | 60,996 | | 0 | 0 | 0 | 0 | 109,793 |
| Funds approved by the ExCom (US \$) | | Project costs | 3,020,440 | 0 | 0 | | | | | | 3,020,440 |
| | | Support costs | 271,096 | 0 | 0 | | | | | | 271,096 |
| Total funds requested for approval at this meeting (US \$) | | Project costs | | | | 3,919,019 | | | | | 0 |
| | | Support costs | | | | 356,161 | | | | | 0 |

* US \$126,545, plus agency support costs of US \$14,393 for the Government of Germany will be deducted from the second tranche, corresponding to 2.90 ODP tonnes of HCFC-141b associated with the enterprise Behdor Ranging, which had ceased to be involved in the HPMP (decision 80/21(c)).

| | |
|--------------------------------------|--------------------------|
| Secretariat's recommendation: | Individual consideration |
|--------------------------------------|--------------------------|

PROJECT DESCRIPTION

22. On behalf of the Government of the Islamic Republic of Iran, UNDP as the lead implementing agency has submitted a request for funding for the second tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US \$4,275,180, consisting of US \$1,593,980, plus agency support costs of US \$111,579 for UNDP; US \$1,047,035, plus agency support costs of US \$119,092 for the Government of Germany; US \$584,000, plus agency support costs of US \$40,880 for UNIDO; US \$504,004, plus agency support costs of US \$60,996 for the Government of Italy and US \$190,000 plus agency support costs of US \$23,614 for UNEP.⁶ The submission includes a progress report on the implementation of the first tranche of stage II, the verification report on HCFC consumption for 2016 to 2018 and the tranche implementation plan for 2020 to 2021.

Verification report

23. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs for 2016, 2017 and 2018 were those reported under Article 7 of the Montreal Protocol. The verification concluded that the Islamic Republic of Iran has achieved the HCFC reduction targets in compliance with the Agreement between the Government and the Executive Committee.

Activities in the foam manufacturing sector (UNDP, UNIDO, Governments of Germany and Italy)

24. Stage II of the HPMP includes the conversion of all the HCFC-based foam manufacturing enterprises in the country. Cyclopentane and water-blown technology have been selected for the conversions in the foam manufacturing sector to reduce the demand for HCFC-141b until its complete phase-out in 2023. Table 3 presents a summary of the activities related to the foam sector.

Table 3. Summary of phase-out activities in the foam sector included in stage II of the HPMP

| Activity | mt | ODP tonnes | Cost (US \$) |
|--|---------------|--------------|------------------|
| Individual conversion of nine enterprises in domestic refrigeration and discontinuous panels (UNIDO/Italy) | 213.30 | 23.46 | 1,612,002 |
| Group conversion of 42 enterprises manufacturing domestic refrigeration, sandwich panels, integral skin and spray foam (UNIDO/Italy) | 231.40 | 25.45 | 1,158,410 |
| Individual conversion of three enterprises manufacturing panels for commercial refrigeration equipment (UNDP) | 55.50 | 6.11 | 541,771 |
| Group conversion of 40 enterprises manufacturing panels for commercial refrigeration equipment (UNDP) | 260.20 | 28.62 | 1,129,130 |
| Conversion of two enterprises manufacturing integral skin foam (Germany) | 39.00 | 4.29 | 168,350 |
| Technical assistance for development of cyclopentane polyol systems to a systems house (UNDP) | - | - | 225,500 |
| Technical assistance for development of water-blown polyol systems to a systems house (Germany) | - | - | 50,000 |
| Technical assistance to 94 SMEs (Germany) | - | - | 545,094 |
| Total Germany | 799.40 | 87.93 | 5,430,257 |

25. The verification of foam enterprises to determine the current baseline of HCFC consumption and equipment in operation, and thus their funding eligibility, has been undertaken. As a result, it was found that the current economic situation in the country has resulted in the closure of several enterprises, while

⁶ As per the letter of 2 October 2019 from the Department of Environment of the Islamic Republic of Iran to UNDP.

the HCFC-141b consumption of other enterprises has increased as they had to fill the void created in the market resulting from the closed enterprises, as explained below.

Individual conversion of nine enterprises in domestic refrigeration and discontinuous panels to cyclopentane (UNIDO/Italy)

26. The results of the verification indicate that:

- (a) Two enterprises with a consumption of 38 mt (4.18 ODP tonnes) of HCFC-141b have started their conversions and a third one (24.30 mt or 2.67 ODP tonnes) will start by the end of 2019;
- (b) The consumption in two enterprises has been reduced to less than 10.00 mt (1.10 ODP tonnes) of HCFC-141b from the time the survey for preparation of stage II was conducted, and should be assisted under the group project to convert to pre-blended cyclopentane, rather than individually;
- (c) Two enterprises with a consumption of 61.00 mt (6.71 ODP tonnes) of HCFC-141b and associated funding of US \$348,006 had converted with their own resources before the initiation of the project; and
- (d) For economic reasons, two enterprises with a consumption of 39.00 mt (4.29 ODP tonnes) of HCFC-141b and associated funding of US \$348,006 have been closed.

Group conversion of 42 enterprises manufacturing domestic refrigeration, sandwich panels, integral skin and spray foam to water-based blowing agent (UNIDO/Italy)

27. The results of the verification indicated that:

- (a) One enterprise with a consumption of 5.10 mt (0.56 ODP tonnes) of HCFC-141b and associated funding of US \$27,695, was absorbed by one of the enterprises that had converted with their own funding, and therefore no longer uses HCFC-141b;
- (b) Fifteen enterprises manufacturing insulation foam for domestic refrigeration and sandwich panels, should convert to pre-blended cyclopentane rather than water-based, given the superior performance that is required for these applications; and
- (c) The consumption of HCFC-141b in three enterprises has increased from 20.00 mt (2.2 ODP tonnes) to 97.70 mt (10.75 ODP tonnes), with an average consumption of 32.30 mt (3.55 ODP tonnes), and should be assisted individually to convert to cyclopentane, rather than under the group project.

Individual conversion of three enterprises manufacturing panels for commercial refrigeration equipment (UNDP)

28. Conversion of these enterprises will start with funds from the second tranche.

Group conversion of 40 enterprises manufacturing panels for commercial refrigeration equipment (UNDP)

29. UNDP has provided foam kits to 15 enterprises consisting of raw materials (polyol and isocyanate) for tests and trials of water-blown formulations using in their equipment. On the basis of the results of the tests, the enterprises' equipment will be optimized and further raw material will be supplied to complete the conversions by December 2019.

Conversion of two enterprises manufacturing integral skin foam (Germany)

30. The Government of Germany has visited the two enterprises and conversion plans have been prepared. The equipment procurement process will commence after the agreements are signed with the enterprises.

Technical assistance for development of cyclopentane polyol systems to a systems house (UNDP)

31. The Memorandum of Agreement with the systems house to develop pentane-based pre-blended polyol systems was signed. The purchase order for the equipment required, including pre-mix unit, reactor, pentane storage tank, premix pumping unit, buffer tank, drum refilling system, and safety-related system, was placed with equipment supplier, and the installation of the equipment is proposed by the end of 2019.

Technical assistance for development of water-blown polyol systems to a systems house (Germany)

32. Implementation of the technical assistance programme has been delayed due to difficulties importing chemical additives required for the development of water-blown pre-blended polyol systems.

Technical assistance to 94 SMEs (Germany)

33. The Government of Germany organized a workshop for SMEs on technical aspects of low-GWP alternative foam systems, and visited 30 SMEs. Technical assistance to support the conversions is being provided in the form of visits by experts when required.

Activities in the commercial refrigeration manufacturing sector (UNDP, Germany)

34. Stage II of the HPMP included the conversion of all the HCFC-based small and medium sized (SME) commercial refrigeration manufacturing enterprises in the country with R-290 as the selected alternative technology.

35. UNDP verified the eligibility of 15 SMEs (out of the 48 included in stage II) with a consumption of 136.5 mt (7.51 ODP tonnes). The 15 enterprises were provided with commercial refrigeration conversion kits (e.g., compact condensers, evaporators, compressors, expansion valves, liquid and moisture indicators, ventilators, thermostat controllers, temperature sensors, refrigerant, and tools) to convert their manufacturing operations of HCFC-22-based commercial refrigeration stand-alone equipment to R-290-based equipment (i.e., display cabinets, island cases, refrigerators). After delivery, the kits were installed with assistance from UNDP and the Government of Germany. The applicability of these conversion kits was validated at each enterprise, focusing on the mechanical and electrical testing of the equipment as well as an evaluation of equipment performance.

36. In line with decision 77/44(d),⁷ a detailed progress report on the use of these conversion kits was provided. It concluded that the use of the conversion kits was successful, and provides opportunities for the remaining enterprises to be assisted in a cost-effective manner. The beneficiary enterprises assisted have committed to stop manufacturing HCFC-22 based commercial refrigeration products six months after their initial production with the alternative refrigerant; other enterprises to be provided with kits in the second and third tranches, have also committed to stopping the use of HCFC-22 six months after receipt of the conversion kits.

⁷ To include in the submission of the request for the second funding tranche a report on the results of the conversion of the first 15 enterprises in the refrigeration and air-conditioning manufacturing sector to low-global-warming-potential alternatives, highlighting the lessons learned and challenges faced.

Refrigeration servicing sector (UNEP, UNIDO and the Government of Germany)

37. The following activities were implemented in the refrigeration servicing sector:

- (a) The signature of an agreement with the technical vocational training organization for the implementation of the good-practice training for technicians; the updating of the curriculum for training and certification systems to integrate good servicing practice for HCFCs; and the procurement of training equipment (e.g., recovery units, cylinders, manifolds, leak detectors, tube cutters, lokrings); and the signature of an agreement with the Iran Standards and Industrial Research Institute (ISIRI) for the development and review of standards;
- (b) The training of 20 master trainers from various training centres in the Islamic Republic of Iran in a refresher course for good practices in refrigeration; one master trainer participated in a regional workshop on good service practice and the handling of flammable refrigerants organized by UNEP; the NOU and one other master trainer participated in the twinning workshop organized by UNEP on the integration of good servicing practice into the vocational training and educational system of the country including the issue of certification;
- (c) The purchase and distribution of four refrigerant identifiers to key ports to support the monitoring of ODS import and export;
- (d) Participation (NOU and two customs officers) in a border dialogue with officials from Afghanistan and Pakistan on ODS trade, organised by UNEP;
- (e) Completion of a workshop on the role of green procurement and the building and construction sector in HCFC phase-out (attended by 200 stakeholders) to strengthen cooperation among the Chamber of Commerce, the Refrigerants Industry Union, the Energy Efficiency Organization, the National Standard Organization and the National Ozone Layer Protection Office to support HCFC phase-out; and
- (f) Translation of publications into Farsi (green customs guide, quick guide on good servicing practices for flammable refrigerants) and distribution to stakeholders.

38. The NOU and the Iran Customs Administration received the Global Montreal Protocol Award for Customs and Enforcement Officers in September 2019 for active use of informal Prior Informed Consent (iPIC), prevention of illegal trade and seizure of illegal trade.

Project implementation and monitoring unit (PMU)

39. The PMU established under the NOU during stage I will continue to assist in the implementation and monitoring of stage II. Activities by the PMU included the recruitment of staff/consultants; the preparation of annual work plans and progress reports; site visits for ongoing projects; the preparation of specifications and the coordination of equipment procurement and liaison with implementing partners; the safe delivery and verification of equipment procured; administrative and financial affairs related to project implementation; coordination and implementation of the non-investment activities; conducting steering committee meetings; and cooperation with the bilateral and implementing agencies involved in the project. The PMU costs incurred under the first tranche are presented in Table 4.

Table 4. PMU costs (US \$)

| Particulars | Approved in principle | Disbursed |
|--|-----------------------|---------------|
| Project implementation and coordination | | |
| Staff costs (four staff members equivalent) | 420,000 | 66,668 |
| National stakeholder meetings (twice a year) | 30,000 | - |
| Computers and office electronic equipment | 10,000 | 3,244 |
| Furniture and equipment | 2,000 | - |
| Stationery and printing | 10,000 | 69 |
| Communication costs | 6,000 | 358 |
| Operational costs and overheads | 22,000 | 5,397 |
| Project monitoring | | |
| Periodic site visits to enterprises to monitor progress | 50,000 | 848 |
| Preparation and submission of annual work plans and progress reports; preparation of reports on project progress | 30,000 | 5,341 |
| Policies and regulations implementation | | |
| Stakeholder meetings (for project progress assessment and project planning and implementation) | 30,000 | 1,341 |
| Capacity building | | |
| Government stakeholder training workshops | 10,000 | 1,140 |
| Gain and loss | | (587) |
| Total | 620,000 | 83,820 |

Level of fund disbursement

40. As of September 2019, of the US \$3,020,440 approved so far, US \$1,243,495 (41.16 per cent) had been disbursed as shown in Table 5. The balance of US \$1,776,945 will be disbursed in 2020 and 2021.

Table 5. Financial report first tranche of stage II of the HPMP for the Islamic Republic of Iran

| Agency | Approved (US \$) | Disbursed (US \$) | Disbursement rate (%) |
|-----------------------|------------------|-------------------|-----------------------|
| UNDP | 1,298,170 | 664,051 | 51 |
| UNIDO | 473,567 | 120,415 | 25 |
| UNEP | 200,000 | 72,956 | 36 |
| Government of Germany | 645,500 | 369,556 | 57 |
| Government of Italy | 403,203 | 16,517 | 4 |
| Total | 3,020,440 | 1,243,495 | 41 |

Implementation plan for the second tranche of the HPMP

41. The following activities will be implemented between January 2020 and December 2021:

PU foam

- (a) Complete the conversion of three individual foam enterprises (6.85 ODP tonnes); initiate of the conversion of another three (10.75 ODP tonnes); and procure equipment to complete the conversion of 26 enterprises in the group project (UNIDO) (US \$428,000), (Government of Italy) (US \$504,004);
- (b) Complete the conversion of 15 enterprises in the group project; procure and install the equipment in the systems house; and procure and install equipment for three individual enterprises (6.11 ODP tonnes) (UNDP) (US \$541,771);
- (c) Complete the conversion of two integral skin foam enterprises (4.29 ODP tonnes) (Government of Germany) (US \$84,175);

Commercial refrigeration

- (d) Provide commercial refrigeration conversions kits to an additional 10 enterprises with an associated phase out of 4.89 ODP tonnes of HCFC-22 to complete their conversion to R-290-based technology (UNDP) (US \$636,320);
- (e) Provide technical assistance to the 40 commercial refrigeration enterprises with an associated phase out of 43.74 ODP tonnes of HCFC-22 being converted to R-290-based technology (Government of Germany) (US \$962,860);

Refrigeration servicing sector

- (f) Setup a refrigerant distribution system by providing industrial recovery and recycling equipment, multiuse refrigerant bottles, storage cylinders, laboratory equipment, cylinder charging equipment and cylinder cleaning (UNDP) (US \$240,000);
- (g) Implementation of two training sessions on policy and enforcement; one train-the-trainers session for master technicians and 20 training sessions for refrigeration servicing technicians; the promotion of alternative technologies; and the drafting of standards and operational procedures for RAC products (UNEP) (US \$190,000);
- (h) Procurement and delivery of training tools to vocational centres (UNIDO) (US \$156,000);

PMU

- (i) The PMU will continue to assist in the implementation and monitoring of stage II, at a total cost of US \$175,889, for staff costs (US \$99,000); stakeholder meetings (US \$15,900); office equipment and furniture (US \$11,000); database maintenance (US \$5,000); site visits and performance verification (US \$21,000); training workshops (US \$8,500); operational costs (US \$15,489) (UNDP).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Legal framework

42. The Government of the Islamic Republic of Iran has already issued HCFC import quotas for 2019 at 3,213 mt (247.4 ODP tonnes), including 1,927.8 mt (106.03 ODP tonnes) of HCFC-22 and 1,285.2 mt (141.37 ODP tonnes) of HCFC-141b, which are below the target in the Agreement between the Government and the Executive Committee and the target allowed under the Montreal Protocol.

Progress in the foam manufacturing sector

43. The Secretariat noted the progress in the implementation of activities in the PU foam manufacturing sector; that equipment required for the conversions has been procured and distributed to several enterprises despite the slow start in the implementation of stage II due to equipment suppliers' hesitation to participate in the bidding processes given the economic uncertainties in the country.

44. Noting the steep reduction in consumption of HCFC-141b from 112.0 ODP tonnes in 2016 (when stage II was approved) to 63.37 ODP tonnes in 2018, the Secretariat requested an update on the current situation in the PU foam sector. It also requested information on whether, in addition to the five enterprises included in stage II that had converted with their own resources or had closed down, any other enterprises

fall in the same situation. UNIDO reported that after verification of the PU foam enterprises it was found that except for those indicated, all of the enterprises were still operating, although production was lower in many of them due to difficulties in the procurement of raw materials because of the existing economic sanctions. However, it is expected that these enterprises will continue operating and could potentially increase consumption when the economic situation improves. The adjustments needed in the PU foam component are those discussed below.

Flexibility to reallocate funding among eligible PU foam enterprises (UNIDO/Italy component)

45. Upon verification of the enterprises included in the PU foam component being implemented by UNIDO and the Government of Italy, UNIDO reported that:

- (a) Two enterprises included for individual conversions (Aysan Sanat and Forouzan) with a consumption of 61.00 mt (6.71 ODP tonnes) of HCFC-141b and associated funding of US \$348,006, and one SME which was included in the group project (Yoosh Electric) with a consumption of 5.10 mt (0.56 ODP tonnes) of HCFC-141b and associated funding of US \$27,695, converted with their own funds before the initiation of the project, potentially resulting in savings of US \$375,701 from stage II;
- (b) For economic reasons, two individual enterprises (Hanzad and Tara Sanat Barfin) with a consumption of 39.00 mt (4.29 ODP tonnes) of HCFC-141b and associated funding of US \$348,006, had closed down;
- (c) Two individual enterprises (Novin Boroodat Enjemad and JAVad Hasani) with a total consumption of 51.00 mt (5.61 ODP tonnes) of HCFC-141b at the time of the approval of stage II, received US \$370,994 for their conversion to cyclopentane technology; however, the current consumption of each one of these enterprises is less than 10.00 mt (1.10 ODP tonnes), therefore should be assisted as part of the group project to adopt pre-blended cyclopentane, and thereby reducing the funding for these two enterprises to US \$102,300 per enterprise, potentially resulting in additional savings of US \$166,394 for stage II;
- (d) Three enterprises initially identified as SMEs and included in the group project (Charmahali, Takran Mobared and Evans) had reported a total consumption of 20.80 mt (2.29 ODP tonnes) of HCFC-141b at the time of approval of stage II; however, the consumption has increased to 97.70 mt (10.75 ODP tonnes) in 2018, therefore should be considered as part of the individual conversions to cyclopentane, rather than under the group project. The cost of these conversions will increase by US \$438,924 (from US \$27,695 to US \$174,003 per enterprise).

46. UNIDO noted that the main reason for the closure of the two foam enterprises and the reduction in HCFC consumption by two enterprises, is the economic situation in the country. They also confirmed that those foam enterprises that had increased their HCFC consumption since the approval of stage II, had not increased their production capacity or after 21 September 2007.

47. Currently, the 42 SMEs included in the group conversion project received approval for conversion to water-blown technology. In addition to the findings described above, after a further technical assessment of the proposed technology, UNIDO noted that for 15 enterprises⁸ producing insulation foam for domestic refrigerators and discontinuous sandwich panel, pre-blended cyclopentane would be a better technical option to maintain the required density and insulation properties. The technology will be supplied by the systems house being assisted by UNDP under stage II. The 15 enterprises are suited to operating with

⁸ These 15 enterprises include the two individual enterprises that UNIDO is proposing to move to the group project.

flammable blowing agent, are located in areas where these substances are allowed, and capable of co-financing part of the conversion.

48. The cost of the conversion to cyclopentane technology is higher (US \$102,300 per enterprise) than the funding approved for water-based technology (US \$27,695 per enterprise) as it includes retrofit or replacement of the foam dispenser and electrostatic grounding, installation of gas detection systems and ventilation. The overall difference in the cost between the earlier approved technology vis-à-vis shifting to pre-blended cyclopentane would be over US \$1 million.

49. In line with relevant decisions, UNIDO is requesting flexibility in the use of the funds so far approved for the PU foam sector. UNIDO has submitted a proposal that stays within the overall funding approved by the Executive Committee for this sector by reallocating funding from those individual enterprises that had closed or already converted (US \$696,010), and the one enterprise (US \$27,695) from the group project, to fund the additional cost of the three enterprises moved to individual conversion and to partially fund the conversions in the group project to pre-blended cyclopentane, noting that they will provide co-funding.

50. The Secretariat had extensive discussions with UNIDO on the proposal to allow the change of technology for the enterprises in the group project, and the possible use of the savings associated with those enterprises that have converted with their own funding and the two enterprises that have closed down (and thus removed from stage II), to assist in funding this change in technology and eventual conversion. The Secretariat also noted that water-blown technology has not been used in previously approved projects for insulation foam for domestic refrigerators due to the lower insulation properties in those applications, and therefore agreed that the request to change to pre-bended cyclopentane is technically sound. The Secretariat has also conducted a thorough review of the requested funding, and concurred that due to additional safety features required in the enterprise, the introduction of cyclopentane technology is more expensive than the water-blown technology. UNIDO confirmed that the enterprises will provide the required co-financing to enable these conversions.

51. The Secretariat noted that given the current circumstances in the Islamic Republic of Iran, it appears reasonable that the savings associated with the two enterprises that had closed down (Hanzad and Tara Sanat Barfin with associated funding of US \$348,006) may be reallocated to other enterprises that still need to address the phase out of HCFC-141b. In contrast, those three enterprises that converted with their own funds (Aysan Sanat, Forouzan and Yoosh Electric), had already phased out the consumption of HCFC-141b, therefore the associated funding of US \$375,701 should be returned to the Fund.

52. UNIDO indicated that the return of funds from enterprises that converted with their own funding would disincentive early action as other enterprises would prefer to wait until their projects start in order to secure the assistance, and this issue should be considered in future cases. Particularly in the case of the Islamic republic of Iran, those funds could have been useful to assist other enterprises. UNIDO also requested that the US \$375,701 be deducted from the third tranche rather than the second tranche as major procurement processes will need to start, for which funding is required. The Secretariat finds reasonable the request from UNIDO to deduct the funding from the third tranche, to allow continue implementation of the conversions.

53. As reported during implementation of the completed stage I and the ongoing implementation of stage II, the particular economic circumstances in the country has resulted in the reduction of consumption in some enterprises (including closure) and an increase in others. Bilateral and implementing agencies have been able to (accurately) report these changes, as all foam enterprises eligible for assistance from the Fund have been identified. Given that this unique situation might continue until 2023 when all the foam enterprises would have been converted, the Secretariat considers relevant the request from UNIDO for flexibility in the implementation of stage II may be considered under the following conditions:

- (a) A detailed report on the status of the conversion of each of the foam enterprises included in stage II would be submitted with each funding tranche request, and would include information on the continued financial viability of the enterprise, the level of HCFC-141b consumption for that year, the alternative technology selected, the total cost from the Multilateral Fund and the level of co-financing, as applicable;
- (b) Any change of technology would be submitted for consideration by the Executive Committee in line with paragraph 7 (a)(v) of the Agreement between the Islamic Republic of Iran and the Executive Committee;
- (c) For enterprises that had received funding for conversion during stage II and close down before the conversion is completed, the corresponding equipment would be transferred for the use of other enterprises eligible to receive assistance, and any unspent balances should be returned to the Fund without prejudice to other eligible enterprises; and
- (d) Once all the foam enterprises are verified and funds allocated for their conversion, any deviation from the approved cost-effectiveness of the PU foam sector for stage II (i.e., US \$6.79/kg) would be recovered from remaining funds for stage II of the HPMP; and any other unspent balances remaining should be returned to the Multilateral Fund.

Commercial refrigeration manufacturing sector (UNDP and the Government of Germany)

54. The report submitted by UNDP on the results of the conversion of the first 15 SMEs in the RAC manufacturing sector to low-GWP alternatives, summarized the lessons learned on the use of the commercial refrigeration conversion kits that were provided. After the initial challenges related to shipment of the kits and their corresponding parts, the assisted SMEs have demonstrated their potential for use with other enterprises that have similar products and consumption levels. The conversions have been made following refrigeration standard EN-378 and the actual charges of the products being converted to R-290 are between 140 and 200 grams, which are well below international standards adopted by the Islamic Republic of Iran.

55. UNDP explained that the strategy being implemented to ensure an orderly transition to R-290 is to provide the technology and training, supply tools and components, build the capacity of the sector and the end-users of the R-290-based equipment (supermarkets and retailers). It is early to provide data on the market acceptance of the R-290-based equipment; however, it is not considered to be an issue as the beneficiary enterprises are being prepared to provide the complete range of services including installation and maintenance of the converted equipment.

56. The Government of the Islamic Republic of Iran, with the assistance of UNDP, will continue to provide these kits to the identified beneficiary enterprises after the release of the second tranche. It is expected that this will support the Government in its efforts to ban new manufacturing capacity based on HCFC-22 from 1 January 2020.

Return of funds from ineligible enterprise in stage I (Germany component)

57. At the 80th meeting, the annual progress report submitted for stage I of the HPMP showed that the enterprise Behdor Ranging, had stopped manufacturing with the use of HCFCs, and the funding allocated for its conversion had already been fully spent in assisting other enterprises without having consulted the Executive Committee in advance. In considering the issue, the Committee decided to deduct US \$126,545, plus agency support costs of US \$14,393 from the second-tranche approval of funds for the Government of Germany when submitted (decision 80/21).

58. In line with decision 80/21, the Secretariat's recommendation has included this deduction from the funds to be approved for the Government of Germany.

Transfer of funds related to UNEP activities in the refrigeration servicing sector

59. Since January 2019, UNEP had been experiencing problems with the transfer of funds due to sanctions imposed in the country, which affected the local banking system. To address this issue, the UN Resident Coordination Office in the Islamic Republic of Iran facilitated the establishment of a UN account at one of the regional banks, capable of transferring funds directly from United Nations Headquarters to the country. This was considered to be the most suitable option, and it will be used from now on for UNEP's projects in the country. The disbursement for the first tranche had been completed. Currently, amendments to the earlier agreements are being done to facilitate an efficient transfer of funds.

Sustainability of the HCFC phase-out

60. The Government of the Islamic Republic of Iran has promulgated regulations that support the conversions in the foam and AC manufacturing sectors. Upon completion of the conversion of the room AC manufacturing sector during stage I, the Government will establish a ban on new manufacturing capacity based on HCFC-22 from 1 January 2020; and a ban on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam when the conversion of the foam projects has been completed. Enterprises that have received assistance for the commercial refrigeration conversion kits have committed to stop manufacturing commercial refrigeration products using HCFC-22 six months after their initial production of R-290 products using the kits; other enterprises to be provided with kits in the second and third tranches have also committed to stopping the use of HCFC-22 six months after receipt of the conversion kits.

Conclusion

61. The Government of the Islamic Republic of Iran continued to effectively implement its HCFC import and export licensing and quota system, achieving compliance with its HCFC consumption targets for 2017 and 2018, as corroborated by the independent verification report. Notwithstanding a slow start due to currency fluctuations and difficulties with the supply of raw materials and equipment, substantial progress has been achieved with the conversion of the first 15 commercial refrigeration enterprises and the start of the conversions in the PU foam sector. UNIDO is requesting the use of flexibility to allow enterprises in the group project to change technology from water-based to pre-blended cyclopentane, and to reallocate the unused funding from five enterprises that stopped using HCFC-141b (four individual and one in the group project) to cover part of the additional incremental cost associated with the change of technology, noting that the assisted enterprises will co-fund the remaining cost. The Islamic Republic of Iran also advanced in the implementation of activities in the refrigeration servicing sector, including technician training and the development of a technician certification system for the safe management of flammable refrigerants. The bilateral and implementing agencies disbursed 41 per cent of the approved funds.

62. With regard to the flexibility requested by UNIDO to reallocate funds from five enterprises in the PU foam sector, the Secretariat noted that the consumption of HCFC-141b by the three enterprises that converted with their own funds was already phased out, and therefore the associated funding of US \$375,701 should be returned to the Fund. In contrast, the Secretariat is presenting for the Committee's consideration the reallocation of US \$348,006 from two enterprises that had closed down, given the particular economic circumstances in the country that has resulted in the reduction of consumption in some enterprises (including closure) and an increase in others. The Secretariat considers relevant that the request from UNIDO for flexibility may be considered under several conditions specified in the document. Furthermore, noting that the change of technology being proposed is a major change in the Agreement

between the Government and the Executive Committee, the Secretariat is submitting it for the Committee's consideration.

RECOMMENDATION

63. The Executive Committee may wish to consider:

- (a) Noting:
 - (i) The progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan (HPMP) in the Islamic Republic of Iran;
 - (ii) That two individual enterprises Hanzad and Tara Sanat Barfin, with a consumption of 39.00 mt (4.29 ODP tonnes) of HCFC-141b and associated funding of US \$348,006, have been closed and removed from stage II;
 - (iii) That UNIDO will move two enterprises for individual conversion with consumption of 51 mt (5.61 ODP tonnes) of HCFC-141b to the group conversion project, and three enterprises in the group conversion project with consumption of 97.7 mt (10.75 ODP tonnes) of HCFC-141b to individual conversion;
 - (iv) That the enterprises Aysan Sanat, Forouzan and Yoosh Electric, with a consumption of 66 mt (7.27 ODP tonnes) of HCFC-141b converted with their own resources before the initiation of the project, and have been removed from stage II, and their associated funding of US \$375,701, plus agency support cost of US \$26,299 would be deducted from the third tranche approval for UNIDO;
 - (v) That US \$126,545, plus agency support costs of US \$14,393 would be deducted from the approval for the Government of Germany, in line with decision 80/21(c);
- (b) Approving:
 - (i) The change in technology from water-based to pre-blended cyclopentane for the small and medium-sized foam enterprises being assisted in the group project, without any additional cost to the Multilateral Fund;
 - (ii) The reallocation of the balance of US \$348,006 from the two enterprises referred to in sub-paragraph (a)(ii) to cover additional costs incurred by the changes in sub-paragraphs (a)(iii) and (b)(i);
- (c) Requesting UNIDO, UNDP and the Governments of Germany and Italy:
 - (i) To submit, with each funding tranche request, a detailed report on the status of the conversion of each of the foam projects covered under stage II including the financial viability, the current level of HCFC-141b consumption, the alternative technology selected, the total cost from the Multilateral Fund and the level of co-financing, as applicable;
 - (ii) To continue providing information as soon as it is known about foam enterprises found to be ineligible for funding or had phased out HCFC-141b without Multilateral Fund assistance, or withdrew from stage II of the HPMP along with their associated consumption and approved funding;

- (iii) To report in advance any change of technology for consideration by the Executive Committee in line with paragraph 7 (a)(v) of the Agreement between the Islamic Republic of Iran and the Executive Committee;
 - (iv) To ensure that for enterprises that had received funding for conversion during stage II and closed down before the conversion is completed, the corresponding equipment would be transferred for the use of other enterprises eligible to receive assistance, and any unspent balances should be returned to the Multilateral Fund without prejudice to other eligible enterprises;
 - (v) To ensure that once all enterprises are verified and funds allocated, any deviation from the approved cost-effectiveness of the polyurethane foam sector for stage II (US \$6.79/kg) should be reported to the Executive Committee and would be recovered from remaining funds of stage II of the HPMP; and
- (d) Further approving the second tranche of stage II of the HPMP for the Islamic Republic of Iran, and the corresponding 2020-2022 tranche implementation plan, at the amount of US \$4,275,180, consisting of US \$1,593,980, plus agency support costs of US \$111,579 for UNDP, US \$1,047,035, plus agency support costs of US \$119,092 for the Government of Germany, US \$584,000, plus agency support costs of US \$40,880 for UNIDO, US \$504,004, plus agency support costs of US \$60,996 for the Government of Italy and US \$190,000, plus agency support costs of US \$24,857 for UNEP.
-