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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Ninety-first Meeting  
Montreal, 5-9 December 2022  
Item 9(d) of the provisional agenda<sup>1</sup>

**PROJECT PROPOSAL: THE NIGER**

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

Phase-down

- Kigali HFC implementation plan (stage I, first tranche) UNIDO and UNEP

<sup>1</sup> UNEP/OzL.Pro/ExCom/91/1

**PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS**  
**Niger (the)**

|  |                    |
|--|--------------------|
| <b>(I) PROJECT TITLE</b>                 | <b>AGENCY</b>      |
| Kigali HFC implementation plan (stage I) | UNIDO (lead), UNEP |

|   |            |           |                                    |
|---|------------|-----------|------------------------------------|
| <b>(II) LATEST ARTICLE 7 DATA (Annex F)</b> | Year: 2021 | 325.69 mt | 843,475 CO <sub>2</sub> -eq tonnes |
|---|------------|-----------|------------------------------------|

| <b>(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (CO<sub>2</sub>-eq tonnes)</b> |         |      |               |                  |       |           |         | <b>Year: 2021</b> |                          |
|--|---------|------|---------------|------------------|-------|-----------|---------|-------------------|--------------------------|
| Chemical   | Aerosol | Foam | Fire-fighting | Refrigeration    |       |           | Solvent | Other             | Total sector consumption |
|  |         |      |               | Manufacturing    |       | Servicing |         |                   |                          |
|  |         |      |               | Air-conditioning | Other |           |         |                   |                          |
| HFC-134a   |         |      |               |                  |       | 185,543   |         |                   | 185,543                  |
| R-404A   |         |      |               |                  |       | 542,867   |         |                   | 542,867                  |
| R-407C   |         |      |               |                  |       | 28,204    |         |                   | 28,204                   |
| R-410A   |         |      |               |                  |       | 86,861    |         |                   | 86,861                   |

| <b>(IV) CONSUMPTION DATA (CO<sub>2</sub>-eq tonnes)</b>                 |     |  |     |
|---|-----|--|-----|
| Baseline (average 2020-2022 HFC consumption plus 65% of HCFC baseline): | n/a | Starting point for sustained aggregate reductions: | n/a |
| <b>CONSUMPTION ELIGIBLE FOR FUNDING</b>                                 |     |  |     |
| Already approved:   | 0   | Remaining:   | n/a |

| <b>(V) ENDORSED BUSINESS PLAN</b> |   | <b>2022</b> | <b>2023</b> | <b>2024</b> | <b>Total</b> |
|-----------------------------------|---|-------------|-------------|-------------|--------------|
| UNIDO                             | HFC phase-down (CO <sub>2</sub> -eq tonnes) | 0           | 0           | 0           | 0            |
|                                   | Funding (US \$)                             | 0           | 0           | 0           | 0            |
| UNEP                              | HFC phase-down (CO <sub>2</sub> -eq tonnes) | 0           | 0           | 0           | 0            |
|                                   | Funding (US \$)                             | 0           | 0           | 0           | 0            |

| <b>(VI) PROJECT DATA</b>   |       | <b>2022</b>   | <b>2023</b> | <b>2024</b> | <b>2026</b> | <b>2029</b> | <b>2030</b> | <b>Total</b> |         |
|--|-------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|---------|
| Montreal Protocol consumption limits (CO <sub>2</sub> -eq tonnes) (estimated values) |       | n/a           | n/a         | 1,346,892   | 1,346,892   | 1,212,203   | 1,212,203   | n/a          |         |
| Maximum allowable consumption (CO <sub>2</sub> -eq tonnes) (estimated values)        |       | n/a           | n/a         | 1,217,808   | 1,207,329   | 1,191,609   | 1,186,369   | n/a          |         |
| Project costs requested in principle (US \$)   | UNIDO | Project costs | 194,500     | 0           | 0           | 213,000     | 0           | 86,000       | 493,500 |
|  |       | Support costs | 13,615      | 0           | 0           | 14,910      | 0           | 6,020        | 34,545  |
|  | UNEP  | Project costs | 69,700      | 0           | 0           | 57,400      | 0           | 64,900       | 192,000 |
|  |       | Support costs | 9,061       | 0           | 0           | 7,462       | 0           | 8,437        | 24,960  |
| Total project costs recommended in principle (US \$)                                 |       | 264,200       | 0           | 0           | 270,400     | 0           | 150,900     | 685,500      |         |
| Total support costs recommended in principle (US \$)                                 |       | 22,676        | 0           | 0           | 22,372      | 0           | 14,457      | 59,505       |         |
| Total funds recommended in principle (US \$)   |       | 286,876       | 0           | 0           | 292,772     | 0           | 165,357     | 745,005      |         |

| <b>(VII) Request for approval of funding for the first tranche (2022)</b> |                                  |                              |
|---|----------------------------------|------------------------------|
| <b>Implementing agency</b>  | <b>Funds recommended (US \$)</b> | <b>Support costs (US \$)</b> |
| UNIDO   | 194,500                          | 13,615                       |
| UNEP  | 69,700                           | 9,061                        |
| <b>Total</b>  | <b>264,200</b>                   | <b>22,676</b>                |

|                                      |                          |
|--------------------------------------|--------------------------|
| <b>Secretariat's recommendation:</b> | Individual consideration |
|--------------------------------------|--------------------------|

## PROJECT DESCRIPTION

1. On behalf of the Government of the Niger, UNIDO as the lead implementing agency has submitted a request for stage I of the Kigali HFC implementation plan (KIP), at a total cost of US \$746,805, consisting of US \$463,500, plus agency support costs of US \$32,445 for UNIDO and US \$222,000, plus agency support costs of US \$28,860 for UNEP, as originally submitted.<sup>2</sup> The submission also included early activities to help avoid uncontrolled growth of HFCs at an additional cost of US \$80,000, plus agency support costs of US \$5,600 for UNIDO.
2. The implementation of stage I of the KIP will assist the Niger in meeting the target of 10 per cent reduction in HFC baseline consumption by 1 January 2029.
3. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$237,795, consisting of US \$133,000, plus agency support costs of US \$9,310 for UNIDO and US \$84,500, plus agency support costs of US \$10,985 for UNEP, as originally submitted. In addition, funds for early activities at US \$80,000, plus agency support costs of US \$5,600 for UNIDO are being requested at the present meeting.

### Background

4. The Niger ratified all the amendments to the Montreal Protocol, including the Kigali Amendment on 29 August 2018. The Niger has an HCFC consumption baseline of 15.98 ODP tonnes or 290.54 metric tonnes (mt) that will be completely phased out 1 January 2030.<sup>3</sup>

### Status of implementation of the HCFC phase-out management plan

5. Stage I of the HCFC phase-out management plan (HPMP) for the Niger was approved at the 66<sup>th</sup> meeting<sup>4</sup> and revised at the 84<sup>th</sup> meeting<sup>5</sup> to phase out 5.60 ODP tonnes of HCFCs used in the refrigeration and air-conditioning (RAC) servicing sector to meet the 35 per cent reduction from the baseline by 2020, at a total cost of US \$560,000, plus agency support costs. At the 88<sup>th</sup> meeting, in approving the third and final tranche, the Executive Committee agreed to extend stage I of the HPMP to 31 December 2022 on an exceptional basis, due to the delays imposed by the COVID-19 pandemic, and noting that no further extension would be requested.<sup>6</sup>
6. Stage II of the HPMP for the Niger was approved at the 90<sup>th</sup> meeting<sup>7</sup> for the complete phase-out of the remaining HCFC consumption of 10.38 ODP tonnes, in the amount of US \$1,040,000, plus agency support costs. Stage II of the HPMP will be completed by December 2031, as stipulated in the Agreement between the Government of the Niger and the Executive Committee.

### Status of implementation of HFC-related activities

7. At the 74<sup>th</sup> meeting, the Niger also received funding for conducting a survey on the use of alternatives to ozone-depleting substances (ODSs) (US \$70,000), completed in September 2017, and at the 81<sup>st</sup> meeting, funding for implementing the enabling activities for HFC phase-down (US \$150,000), which were completed in December 2020. These activities assisted the country *inter alia* in ratifying the Kigali

<sup>2</sup> As per the letter of 11 August 2022 from the Ministry of the Environment and the Fight against Desertification of the Niger to UNIDO.

<sup>3</sup> Except for those HCFCs allowed for a servicing tail between 2030 and 2040, where required, consistent with the provisions of the Montreal Protocol.

<sup>4</sup> Decision 66/40 and document UNEP/OzL.Pro/ExCom/66/44.

<sup>5</sup> Annex XVI of document UNEP/OzL.Pro/ExCom/84/75.

<sup>6</sup> Blanket approval decision 88/40.

<sup>7</sup> Decision 90/42 and document UNEP/OzL.Pro/ExCom/90/34.

Amendment, updating its licensing system to include HFCs and HFC blends, undertaking a survey on the imports of HFCs and equipment containing them and the related market trends, reporting of HFC import data under Article 7 of the Montreal Protocol, identifying capacity-building needs for refrigeration technicians to support the transition to alternatives; analyzing policy options to facilitate HFC phase-down, reviewing the existing national and regional standards on energy efficiency and labeling, and strengthening the dialogue with energy experts at the national and regional levels.

### Policy, regulatory, and institutional frameworks

8. The Ministry of the Environment and the Fight against Desertification (ME/LCD) is the national body responsible for the implementation of the Montreal Protocol. The national ozone unit (NOU), within the ME/LCD, is responsible for collecting and reporting consumption of controlled substances under the Montreal Protocol, operating the ODS import licensing system, allocating quotas, and supervising the implementation of all projects approved by the Multilateral Fund.

9. The National Ozone Committee, composed of the Ministry of Commerce and Private Sector Promotion, the Directorate General of Customs, the National Institute of Statistics, and ODS importers and distributors, extended its mandate to also support HFC phase-down.

10. The Niger has an operational ODS import licensing and quota system, currently being applied to HCFCs. In 2021, the licensing system was extended to include importers of HFCs and equipment containing them. These imports are now subject to authorization by the Ministry of Commerce, Industry, and Youth Entrepreneurship after obtaining the NOU's assessment. The NOU also maintains records of imports of HFCs and the equipment containing them.

11. The Niger will only issue quotas for HFC imports from 2024, the year of the HFC consumption freeze. The national quota will be distributed to importers on a "first come, first served" basis. Codes for HFCs and equipment containing them based on the Harmonized System updated in 2022 must now be included in the software of the customs department.

12. Regional regulations by the West African Economic and Monetary Union that harmonize regulations for the import, marketing, use, and re-export of ODSs and equipment containing them, have not been extended to HFCs yet.

### HFC consumption and sector distribution

13. The Niger only imports HFCs. In 2021, the Niger consumed R-404A (64 per cent of total HFC consumption in CO<sub>2</sub>-equivalent (CO<sub>2</sub>-eq) tonnes), HFC-134a (22 per cent), R-410A (10 per cent) and R-407C (3 per cent). Table 1 presents the country's HFC consumption by commercial substance, as reported under the country programme (CP) implementation report.

**Table 1. HFC consumption in the Niger (2019-2021 CP implementation report)**

| HFC                             | GWP)     | 2019          | 2020          | 2021          | Share of HFC consumption in 2021 (%)* |
|---------------------------------|----------|---------------|---------------|---------------|---------------------------------------|
| <b>mt</b>                       |          |               |               |               |                                       |
| HFC-134a                        | 1,430.00 | 188.11        | 154.06        | 129.75        | 40                                    |
| R-404A                          | 3,921.60 | 315.73        | 159.07        | 138.43        | 43                                    |
| R-407C                          | 1,773.85 | 38.44         | 22.52         | 15.90         | 5                                     |
| R-410A                          | 2,087.50 | 74.14         | 48.60         | 41.61         | 13                                    |
| <b>Total (mt)</b>               |          | <b>616.42</b> | <b>384.25</b> | <b>325.69</b> | <b>100</b>                            |
| <b>CO<sub>2</sub>-eq tonnes</b> |          |               |               |               |                                       |
| HFC-134a                        | 1,430.00 | 268,997       | 220,306       | 185,543       | 22                                    |
| R-404A                          | 3,921.60 | 1,238,167     | 623,809       | 542,867       | 64                                    |

| HFC                                     | GWP)     | 2019             | 2020           | 2021           | Share of HFC consumption in 2021 (%)* |
|---|----------|------------------|----------------|----------------|---------------------------------------|
| R-407C                                  | 1,773.85 | 68,187           | 39,950         | 28,207         | 3                                     |
| R-410A                                  | 2,087.50 | 154,767          | 101,453        | 86,861         | 10                                    |
| <b>Total (CO<sub>2</sub>-eq tonnes)</b> |          | <b>1,730,118</b> | <b>985,514</b> | <b>843,475</b> | <b>100</b>                            |

14. The high consumption of R-404A and other HFCs in 2019 could be attributed to overstocking in response to the awareness campaigns on the Kigali Amendment and its implications for imports. The trend of overstocking did not continue in 2020 due to the effect of the COVID-19 pandemic.

#### *Country programme implementation report*

15. The Government of the Niger reported HFC sector consumption data under the 2019, 2020 and 2021 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

#### Sector distribution of HFCs

16. The Niger consumes HFCs only in the RAC servicing sector. In 2021, HFCs were mainly consumed for servicing in the commercial refrigeration sub-sector (47 per cent in mt and 67 per cent in CO<sub>2</sub>-eq tonnes), followed by the domestic refrigeration, residential air-conditioning (AC) and mobile air-conditioning (MAC) sub-sectors, as shown in table 2.

**Table 2. HFC consumption in the RAC servicing sub-sectors (2021)**

| RAC servicing sub-sector                | HFC-134a       | R-404A         | R-407C        | R-410A        | Total          | Share of total consumption (%) |
|---|----------------|----------------|---------------|---------------|----------------|--------------------------------|
| <b>mt</b>                               |                |                |               |               |                |                                |
| Domestic refrigeration                  | 100.07         | 0.0            | 0.0           | 0.0           | 100.07         | 31                             |
| Commercial refrigeration                | 4.30           | 135.05         | 15.04         | 0.0           | 154.39         | 47                             |
| Industrial and transport refrigeration  | 1.55           | 3.38           | 0.86          | 0.0           | 5.79           | 2                              |
| Residential AC                          | 0.0            | 0.0            | 0.0           | 41.21         | 41.21          | 13                             |
| Commercial AC                           | 0.0            | 0.0            | 0.0           | 0.40          | 0.40           | 0                              |
| MAC                                     | 23.83          | 0.0            | 0.0           | 0.0           | 23.83          | 7                              |
| <b>Total (mt)</b>                       | <b>129.75</b>  | <b>138.43</b>  | <b>15.9</b>   | <b>41.61</b>  | <b>325.69</b>  | <b>100</b>                     |
| <b>CO<sub>2</sub>-eq tonnes</b>         |                |                |               |               |                |                                |
| Domestic refrigeration                  | 143,100        | 0              | 0             | 0             | 143,100        | 17                             |
| Commercial refrigeration                | 6,149          | 529,612        | 26,679        | 0             | 562,440        | 67                             |
| Industrial and transport refrigeration  | 2,217          | 13,255         | 1,528         | 0             | 17,000         | 2                              |
| Residential AC                          | 0              | 0              | 0             | 86,026        | 86,026         | 10                             |
| Commercial AC                           | 0              | 0              | 0             | 835           | 835            | 0                              |
| MAC                                     | 34,077         | 0              | 0             | 0             | 34,077         | 4                              |
| <b>Total (CO<sub>2</sub>-eq tonnes)</b> | <b>185,543</b> | <b>542,867</b> | <b>28,207</b> | <b>86,861</b> | <b>843,473</b> | <b>100</b>                     |

17. There are 1,503 identified technicians (including three women), out of which 1,250 are working in informal workshops. There are 458 known workshops (25 per cent of them formally established) in the servicing sector. In addition, there are 176 identified technicians working in 89 workshops for MAC. The technicians in the MAC sector have not received training in good servicing practices under the Multilateral Fund. A brief description of consumption by servicing sub-sector is presented below.

*Domestic, commercial, industrial and transport refrigeration servicing*

18. Altogether, the domestic and commercial refrigeration servicing sub-sectors consume 84 per cent of the HFCs in the country in CO<sub>2</sub>-eq tonnes. Domestic refrigeration uses HFC-134a in small fridges and freezers, mainly for domestic purposes and in some commercial and healthcare facilities for medicine storage. The introduction of R-600a refrigerators is slow due to price, concerns about flammability of the refrigerant, and lack of expertise by technicians. Technicians covering domestic appliances are generally not handling other types of equipment, mostly in the informal sector and not covered by HPMP training.

19. Commercial, industrial and transport refrigeration sub-sectors mostly use HFC-134a, R-404A and R-407C. The commercial refrigeration servicing sector consumes 67 per cent of HFCs in the country (in CO<sub>2</sub>-eq tonnes). R-404A is used to serve food stores, food outlets, cold stores, bakeries, and other food preparation facilities. It is used in factory-sealed units, as well as for bespoke refrigeration units assembled in workshops or on-site. The sector includes workshops, technicians, and small and medium-sized enterprises (SMEs) designing/assembling and installing equipment using R-404A and HCFC-22. In most cases, these SMEs act as trusted advisers to the equipment owners in the selection of technology. Industrial and transport refrigeration only use 2 per cent of the HFCs in the country (in CO<sub>2</sub>-eq tonnes).

*Residential and commercial air-conditioning servicing*

20. Residential AC equipment uses HCFC-22 (90 per cent) and R-410A (10 per cent). Although R-410A consumption is still low (10 per cent of HFC consumption in CO<sub>2</sub>-eq tonnes), R-410A-based AC units are rapidly replacing HCFC-22 units. HFC-32-based AC units are not available and only limited amounts of R-290-based AC units have been imported or retrofitted from HCFC-22 by individuals. Commercial AC systems use mostly R-410A, and more research is required to identify whether there are HFC-134a-based chilled water systems. Servicing in this sector is provided by relatively larger enterprises. Many of the HPMP activities address technicians working in the AC sector, given its extensive use of HCFC-22.

*Mobile air-conditioning servicing*

21. This sector, which was not assisted during the HPMP, consumes 7 per cent of HFCs in mt and 4 per cent in CO<sub>2</sub>-eq tonnes. Mobile AC in the Niger is prone to leaks and commonly repaired with used parts from other vehicles. While only 7 per cent of vehicles receive AC servicing, each vehicle serviced has practically its entire charge replaced. Servicing practices need to be improved to ensure proper operation of the units, reduce leaks, and recover the refrigerant. Alternatives such as HFO-1234yf are still not available and their introduction will be determined by the AC technology used in cars imported into the country, many of them second-hand vehicles.

**Phase-down strategy in stage I of the Kigali HFC implementation plan**

Overarching strategy

22. The Niger is proposing three stages for the KIP. Stage I aims to achieve a 10 per cent reduction from its HFC baseline consumption by 2029 and it is proposed to be implemented simultaneously with the HPMP until 2030.

Estimated HFC baseline and proposed HFC reductions during stage I

23. In the absence of HFC consumption data for 2022, the Government of the Niger estimated its HFC baseline using as reference the reported HFC consumption for 2020 and 2021 and an estimated HFC

consumption for 2022.<sup>8</sup> The 2022 HFC consumption was estimated using the average consumption of 2019, 2020 and 2021. By adding 65 per cent of the HCFC baseline (in CO<sub>2</sub>-eq tonnes) to the average HFC consumption in 2020-2022, the estimated HFC baseline is 1,346,892 CO<sub>2</sub>-eq tonnes, as shown in table 3.

**Table 3. Estimated HFC baseline for the Niger (CO<sub>2</sub>-eq tonnes)**

| Baseline component     | 2020                             | 2021    | 2022       | 2020-2022 average |
|------------------------|----------------------------------|---------|------------|-------------------|
| HFC consumption        | 985,514                          | 843,475 | *1,186,369 | *1,005,119        |
| HCFC baseline          | 290.5 mt x 1,810 = 525,805 x 65% |         |            | 341,773           |
| Estimated HFC baseline |                                  |         |            | 1,346,892         |

\*Estimate

24. The Government of the Niger and UNIDO forecasted HFC consumption in an unconstrained scenario, and calculated the level of HFC reductions required to ensure compliance with the Montreal Protocol at different points in time. The annual average growth in HFC consumption used was 6 per cent, and in addition to the growth resulting from economic activity, an annual increase of HFC consumption was estimated as the result of the phase-out of HCFCs between 2022 and 2030. The forecast of HFC consumption in an unconstrained scenario is presented in table 4.

**Table 4. Unconstrained scenario of HFC consumption forecast and required reductions (CO<sub>2</sub>-eq tonnes)**

|   | 2022             | 2023             | 2024             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| HFC consumption growing at an annual rate of 6%         | 1,186,369        | 1,257,551        | 1,333,004        | 1,412,984        | 1,497,764        | 1,587,629        | 1,682,887        | 1,783,860        | 1,890,892        |
| HFC phased in from HCFC phase-out <sup>9</sup>          | 41,919           | 41,919           | 41,919           | 41,919           | 41,919           | 41,919           | 41,919           | 41,919           | 41,919           |
| <b>Total HFC consumption</b>                            | <b>1,228,288</b> | <b>1,299,470</b> | <b>1,374,923</b> | <b>1,454,904</b> | <b>1,539,683</b> | <b>1,629,548</b> | <b>1,724,806</b> | <b>1,825,779</b> | <b>1,932,811</b> |
| Montreal Protocol limit based on the estimated baseline | n/a              | n/a              | 1,346,892        | 1,346,892        | 1,346,892        | 1,346,892        | 1,346,892        | 1,212,203        | 1,212,203        |
| Required HFC reductions                                 | n/a              | n/a              | 28,031           | 108,011          | 192,791          | 282,656          | 377,914          | 613,577          | 720,608          |

25. Based on the analysis presented in table 4, in an unconstrained scenario, the Niger would need to undertake activities to reduce HFC consumption by 28,031 CO<sub>2</sub>-eq tonnes in 2024 to ensure compliance with the HFC consumption target, and the later such action is taken, the larger the reduction needed.

26. Stage I of the KIP proposes, in order to limit the growth of HFCs, to freeze HFC consumption from 2024 at the estimated 2022 HFC consumption level of 1,186,369 CO<sub>2</sub>-eq tonnes, plus the additional HFC phase-in resulting from HCFC phase-out, as shown in table 5 below. The amount of HFCs phased in every year would gradually decrease as HPMP activities gradually help replace HCFC-22 with low-global-warming-potential (GWP) alternatives.

**Table 5. HFC reductions proposed by stage I of the KIP for the Niger (CO<sub>2</sub>-eq tonnes)**

|  | 2022      | 2023      | 2024      | 2025      | 2026      | 2027      | 2028      | 2029      | 2030      |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HFC consumption frozen at the 2022 level | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 | 1,186,369 |

<sup>8</sup> The HFC baseline had been initially estimated using the average reported HFC consumption for the years 2019 to 2021. Noting that the consumption in 2019 was unusually higher than in any other year, 2019 was no longer used.

<sup>9</sup> The annual increase of 41,919 CO<sub>2</sub>-eq tonnes of HFCs was estimated based on the assumption that the entire 164.70 mt of HCFC-22 consumption remaining in the country is replaced by HFCs (18.2 mt replaced by R-404A and 146.5 mt replaced by R-410A). This corresponds to an introduction of 377,272 CO<sub>2</sub>-eq tonnes of HFCs between 2022 and 2030 (41,919 CO<sub>2</sub>-eq tonnes each year). Considering the level of HFC consumption in the country, the additional consumption arising from the remaining HCFC-22 being phased out is low (3.2 per cent of the 2022 HFC consumption).

|   | 2022                       | 2023             | 2024             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             |
|---|----------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| HFC phased in from HCFC phase-out                       | 41,919                     | 36,679           | 31,439           | 26,199           | 20,960           | 15,720           | 10,480           | 5,240            | 0                |
| <b>Total HFC consumption</b>                            | <b>1,228,288</b>           | <b>1,223,048</b> | <b>1,217,808</b> | <b>1,212,568</b> | <b>1,207,329</b> | <b>1,202,089</b> | <b>1,196,849</b> | <b>1,191,609</b> | <b>1,186,369</b> |
| Montreal Protocol limit based on the estimated baseline | n/a                        | n/a              | 1,346,892        | 1,346,892        | 1,346,892        | 1,346,892        | 1,346,892        | 1,212,203        | 1,212,203        |
| HFC reductions from the Montreal Protocol limit         | CO <sub>2</sub> -eq tonnes |                  | 129,084          | 134,324          | 139,563          | 144,803          | 150,043          | 20,594           | 25,834           |
|   | Rate (%)                   |                  | 9.6              | 10.0             | 10.4             | 10.8             | 11.1             | 1.7              | 2.1              |

27. As shown in table 5, using the estimated 2022 HFC consumption and baseline, freezing HFC consumption from 2024 at the estimated 2022 HFC consumption level would help the country maintain HFC consumption at around 10 per cent below the estimated HFC consumption baseline between 2024 and 2028, and around 2 per cent below the Montreal Protocol limit in 2029 and 2030.

### Strategy components

28. The Niger developed its overarching strategy for the KIP using as a reference the “maintain and build” concept for low-volume-consuming (LVC) countries presented by the Technology and Economic Assessment Panel (TEAP) in its report on Decision XXXI/1, which proposes funding based on a sectoral approach in RAC and MAC servicing and other cross-cutting activities.

29. In consultation with stakeholders and using a rating approach based on consumption levels and ease of implementation, the Government of the Niger determined that stage I of the KIP would prioritize three sectors: domestic and commercial refrigeration, residential AC, and MAC. Activities including capacity-building, training and curricula updates, awareness campaigns for industry stakeholders, end-user programmes, and support to local associations will be implemented in each of these sectors. In addition, stage I of the KIP includes the refrigerant management and energy-efficiency component, building on the activities initiated under the HPMP; the policy component aiming to strengthen the regulatory framework and control mechanisms; and the project coordination and monitoring component. Elements of the KIP for the Niger with their cost breakdown are presented below:

- (a) *Domestic and commercial refrigeration:* Assist the domestic refrigeration sector (not assisted during the HPMP) through training and basic tools for servicing technicians and assistance to facilitate the introduction of R-600a technology; and improve the capacity of SMEs in the commercial refrigeration sector to handle low-GWP technologies (US \$165,000);
- (b) *Residential AC:* Support the ongoing efforts to counter the existing trend of importing R-410A-based residential AC unit, and to promote the adoption of R-290-based technology (US \$123,000);
- (c) *MAC:* Assist the MAC sector (not assisted under the HPMP) in ensuring proper servicing operations and leakage reduction in MAC units by providing training and tools to MAC technicians, developing a code of practice, and extending certification to the MAC sector (US \$123,000);
- (d) *Refrigerant management and energy efficiency:* Reinforce the operation of the centre of excellence funded under stage II of the HPMP; expand the existing recovery and recycling operation to include refrigerant reclaiming, assessment of potential refrigerant destruction at end-of-life, and energy-efficiency activities including audits of energy consumption in the RAC sector; production of information on energy-efficiency improvements; and cost reduction through better design and use of more efficient systems (US \$90,500);



- (e) *Strengthening the regulatory framework and control mechanisms:* Promulgate and harmonize regulatory and control measures and ensure their application and monitoring, including: upgrades to the licensing and quota systems; implementation of a reporting system for importers; the development, revision and adoption of standards, including coordination with two regional economic and monetary communities; the reinforcement of market monitoring including surveys; the development of regulatory measures for the progressive ban of imports of HFC-134a-based equipment; and the continued training of customs officers (US \$123,000); and
- (f) *Project monitoring and coordination:* continuous oversight of project activities by the NOU, ongoing communication with the implementing agencies, field visits to stakeholders, and regular reviews and preparation of reports (US \$61,000), with the following cost breakdown: international and national consultants (US \$27,000), travel (US \$19,000), consultation meetings (US \$9,000) and other expenses (US \$6,000).

Early activities<sup>10</sup>

30. In order to avoid uncontrolled growth of HFC consumption in the RAC sub-sectors, the Government proposes to implement early activities at a total cost of US \$80,000 in the period 2022–2024, including a study and coordination meeting for the integration of GWP considerations in the Minimum Energy Performance Standards (MEPS), for US \$10,000, and a programme to assist importers and distributors in supplying domestic refrigeration units using R-600a to health providers for the preservation of medicines, and residential AC units using R-290 to ministries and hotels, including procurement, distribution, installation and awareness-raising activities for US \$70,000.

Total cost of stage I of the Kigali HFC implementation plan

31. The Government of the Niger proposes to implement the KIP in three stages, with stage I running until 2030 simultaneously with the HPMP. The budget for stage I was established at US \$685,500, and the indicative budget for the entire KIP was estimated at US \$2,742,000, as shown in table 6.

**Table 6: Proposed budget for stage I of the KIP for the Niger**

| Stage of the KIP  | Cost (US \$)     |
|-------------------|------------------|
| Stage I           | 685,500          |
| Stage II          | 1,371,000        |
| Stage III         | 685,500          |
| <b>Total cost</b> | <b>2,742,000</b> |
| Early activities  | 80,000           |

32. The proposed activities and costs for stage I of the KIP are summarized in table 7.

**Table 7. Cost of activities to be implemented in stage I of the KIP**

| Activity  | Implementing agency | Cost by sector (US \$) |        |        | Total cost (US \$) |
|---|---------------------|------------------------|--------|--------|--------------------|
|   |                     | Refrigeration          | AC     | MAC    |                    |
| <i>Activities addressing the priority sectors</i> |                     |                        |        |        |                    |
| Support for industry associations                 | UNEP                | 5,000                  | 3,000  | 5,000  | 13,000             |
| Technician training                               |                     | 45,000                 | 45,000 | 45,000 | 135,000            |
| Extending the technician certification scheme     |                     | 0                      | 0      | 14,000 | 14,000             |

<sup>10</sup> Decision 87/50(g)(iii) requests Article 5 countries submitting stages I of the KIPs to include an overview of any early actions to control HFC consumption.

| Activity   | Implementing agency | Cost by sector (US \$) |                |                | Total cost (US \$)  |
|--|---------------------|------------------------|----------------|----------------|---------------------|
|  |                     | Refrigeration          | AC             | MAC            |                     |
| <i>Activities addressing the priority sectors</i>                              |                     |                        |                |                |                     |
| Provision of tools and equipment for training                                  | UNIDO               | 30,000                 | 0              | 30,000         | 60,000              |
| Development of codes of practice   |                     | 0                      | 0              | 14,000         | 14,000              |
| SME programmes   |                     | 35,000                 | 0              | 0              | 35,000              |
| Technology demonstration   |                     | 35,000                 | 60,000         | 0              | 95,000              |
| Awareness campaigns for end-users  |                     | 15,000                 | 15,000         | 15,000         | 45,000              |
| <b>Sub-total for activities addressing priority sectors</b>                    |                     | <b>165,000</b>         | <b>123,000</b> | <b>123,000</b> | <b>411,000</b>      |
| <i>Activities common to all sectors</i>  |                     |                        |                |                |                     |
| <b>Activity</b>  |                     |                        |                | <b>Agency</b>  | <b>Cost (US \$)</b> |
| <i>Refrigerant management and energy-efficiency</i>                            |                     |                        |                |                |                     |
| Assessment of the economic feasibility of reclamation facilities               |                     |                        |                | UNIDO          | 5,000               |
| Establishment of sound management of non-reusable refrigerants                 |                     |                        |                |                | 40,500              |
| Study on the management of end-of-life of appliances and HFC banks             |                     |                        |                |                | 20,000              |
| Programme to increase energy efficiency in designated sub-sectors              |                     |                        |                |                | 25,000              |
| <b>Sub-total for refrigerant management and energy efficiency</b>              |                     |                        |                |                | <b>90,500</b>       |
| <i>Regulatory framework and control mechanisms</i>                             |                     |                        |                |                |                     |
| Strengthening the HFC licensing and quota system                               |                     |                        |                | UNIDO          | 3,000               |
| Developing, revising and adopting standards & labeling of refrigerants         |                     |                        |                |                | 15,000              |
| Licensing of service workshops   |                     |                        |                |                | 10,000              |
| Awareness-raising campaign addressed to the government                         |                     |                        |                |                | 10,000              |
| Strengthening record-keeping and reporting by enterprises                      |                     |                        |                |                | 10,000              |
| Provision of refrigerant identifiers to customs                                |                     |                        |                |                | 15,000              |
| Strengthening HFC import records by customs                                    |                     |                        |                |                | 10,000              |
| Training of customs officers and enforcement officers, developing a curriculum |                     |                        |                | UNEP           | 40,000              |
| Improving continuous market monitoring, including surveys                      |                     |                        |                |                | 10,000              |
| <b>Sub-total for regulatory framework and control mechanisms</b>               |                     |                        |                |                | <b>123,000</b>      |
| Coordination and management of KIP implementation                              |                     |                        |                | UNIDO          | 61,000              |
| <b>Total for stage I of the KIP</b>  |                     |                        |                |                | <b>685,500</b>      |
| <i>Early activities</i>  |                     |                        |                |                |                     |
| Integrate GWP levels in MEPS   |                     |                        |                | UNIDO          | 10,000              |
| Increase the availability and accessibility of alternatives with lower GWP     |                     |                        |                |                | 70,000              |
| <b>Sub-total for early activities</b>  |                     |                        |                |                | <b>80,000</b>       |
| <b>Grand total for stage I of the KIP and early activities</b>                 |                     |                        |                |                | <b>765,500</b>      |

*Simultaneous implementation of HCFC phase-out and HFC phase-down*

33. The Government of the Niger included in its submission a section related to the simultaneous implementation of the HPMP and the KIP, including its commitment to harmonize activities for the phase-out of HCFCs and phase-down of HFC consumption to the extent possible, on the understanding that both multi-year agreements would be governed by separate agreements between the country and the Executive Committee. The Government identified activities that could be implemented in an integrated manner minimizing expenses and logistical costs, and activities that would need to be implemented in parallel.

34. Activities that could be implemented in an integrated manner include procurement of tools, some regulatory measures, training and certification of AC technicians, training of customs officers; strengthening technical schools and refrigeration associations; refrigerant containment strategies; adopting

standards and codes of practice to facilitate the safe adoption of flammable and/or toxic low-GWP refrigerants; and project coordination.

35. Activities that would need to be implemented in parallel include awareness campaigns specific to sectoral activities, training activities for specific sectors such as MAC and domestic refrigeration, and the distribution of basic equipment and service tools including recovery/recycling units for those sectors.

36. Stage I of the KIP will be implemented in three tranches. The schedule of HFC phase-down and HCFC phase-out commitments, and of the KIP and HPMP tranches is presented in Annex I.

#### *Gender policy implementation*<sup>11</sup>

37. In the course of implementation of the KIP, the NOU will ensure the participation of women in the training and certification programmes for customs officers and RAC technicians; promote the participation of women in the RAC programmes in secondary and vocational schools; and sensitize stakeholders to the gender policy of the Multilateral Fund. Activities planned and budgeted by both UNIDO and UNEP include: encouraging women working in the field to join professional associations; targeting a 20 per cent rate of female trainees among the customs and other enforcement officers; increasing the number of women participating in the RAC technician training and certification schemes; earmarking a number of tools provided under the KIP for use by female technicians; mandatory collecting of gender-disaggregated data; including the gender dimension in the selection of beneficiaries for end-user activities; promoting the role of women in refrigerant management and energy efficiency; and involving the Ministry for the Promotion of Women and the Protection of Children in the implementation of the KIP as part of the project coordination and management component. The implementing agencies' results framework requires the inclusion of gender-responsive indicators, targets, and baseline data to monitor progress in promoting gender equality. Project staff has completed the UN Women online training courses, UNIDO's gender focal point was consulted during the preparation of the proposal, and gender will be considered in the recruitment of international and national experts.

#### Activities planned for the first tranche of stage I

38. The first funding tranche of stage I of the KIP in the total amount of US \$217,500 will be implemented between January 2023 and December 2026 and will include the following activities:

- (a) *Domestic and commercial refrigeration sector:* Provision of tools and equipment (list to be determined based on needs) to the refrigeration association and vocational schools for training, and formulation of the plan to provide technical assistance to commercial refrigeration SMEs (UNIDO) (US \$33,000); support to the industry association and training of refrigeration technicians not trained under the HPMP on the use of R-600a (UNEP) (US \$17,000) (total US \$50,000);
- (b) *AC sector:* Awareness campaign on low-GWP alternatives for end-users (UNIDO) (US \$5,000), and support to the industry association and training to technicians on commercial AC technologies to support the HPMP training programme (UNEP) (US \$16,000) (total US \$21,000);
- (c) *MAC sector:* Development of the code of good practices for the MAC sector, procurement of MAC training tools and equipment (to be determined based on needs) and demonstration units for MAC technician training workshops, and awareness targeted to MAC end-users

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<sup>11</sup> In line with decision 84/92(d), decision 90/48(c) encouraged bilateral and implementing agencies to continue ensuring that the operational gender mainstreaming policy was applied to all projects, taking into consideration the specific activities presented in table 2 of document UNEP/OzL.Pro/ExCom/90/37.

(UNIDO) (US \$34,000); support to the industry association, training of 80 MAC technicians on good servicing practices, and preparation of requirements to include MAC in the technician certification programme (UNEP) (US \$24,000) (total US \$58,000);

- (d) *Refrigerant management and energy efficiency component*: Assessment of the economic feasibility of reclamation facilities, recruitment of a national expert to develop a strategy for managing non-recyclable refrigerants and programme to increase energy efficiency in specific applications (UNIDO) (US \$29,000);
- (e) *Regulatory framework and control mechanisms component*: Strengthening the HFC licensing and quota system, starting the development of standards and labeling of refrigerants, and an awareness-raising campaign to promote KIP activities (UNIDO) (US \$12,500); strengthening of HFC import records by customs, update of the customs curriculum and training of customs officers (UNEP) (US \$27,500) (total US \$40,000); and
- (f) *Project coordination and monitoring*: Including international and national consultants (US \$8,000), travel (US \$8,000) and consultation meetings (US 3,500) (UNIDO) (total US \$19,500).

39. In addition, the Government of the Niger is requesting at the present meeting US \$80,000 for the implementation of early activities as described in paragraph 30.

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

40. In the absence of cost guidelines for HFC phase-down, the Secretariat reviewed stage I of the KIP in light of existing policies and guidelines of the Multilateral Fund, stage II of the HPMP, and the 2022-2024 business plan of the Multilateral Fund. However, it is noted that key aspects of the project review, such as the estimation of funding levels for stage I of the KIP would require further consideration by the Executive Committee in the absence of cost guidelines for HFC phase-down in the servicing sector.

#### Overarching strategy

##### *Proposed HFC reductions in the absence of an established HFC baseline*

41. The Government of the Niger estimated a preliminary baseline of 1,346,892 CO<sub>2</sub>-eq tonnes based on the reported HFC consumption for 2020 and 2021, and an estimated 2022 HFC consumption of 1,186,369 CO<sub>2</sub>-eq tonnes.<sup>12</sup> Stage I of the KIP proposes to limit the growth in HFC consumption by freezing it at the estimated 2022 HFC consumption level from 2024. Based on the estimated values, this proposal would help the Government of the Niger, ensuring HFC consumption levels between 2024 and 2028 that are already 10 per cent below the Montreal Protocol limits, and 1 per cent below the Montreal Protocol limit in 2029 and 2030, as shown in table 5.

42. The Secretariat notes with appreciation the initiative by the Government of the Niger to limit its growth of HFC consumption at an early stage. However, the Secretariat also notes that because the 2022 HFC consumption is not known yet, the current proposal could have different results depending on the actual 2022 HFC consumption once it is known.

43. The application of several scenarios of HFC consumption in 2022 to the proposed model showed that if HFC consumption in 2022 is below 1,215,000 CO<sub>2</sub>-eq tonnes, freezing HFC consumption in 2024 at the 2022 level will ensure compliance with the Montreal Protocol for all the years covered by stage I. On

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<sup>12</sup> 2022 HFC consumption was estimated based on the average HFC consumption between 2019 and 2021.

the contrary, if 2022 HFC consumption turns out to be greater than 1,215,000 CO<sub>2</sub>-eq tonnes, the freeze at 2022 levels in 2024 would not be sufficient to reach compliance in 2028 and 2029; and if it turns out to be larger than 1,380,000 CO<sub>2</sub>-eq tonnes, the freeze at 2022 levels in 2024 would not be sufficient to reach compliance in 2024.

44. Accordingly, the Secretariat and UNIDO agreed that, on an interim basis, the level of HFC reductions proposed will be as indicated in table 5. Once the 2022 consumption and HFC baseline are known, the HFC targets and reductions will be revised accordingly, and the level of HFC consumption to be achieved from 2024 would be either the actual 2022 HFC consumption or the Montreal Protocol control limit, whichever is lower.

45. The Secretariat acknowledges that the issue related to the uncertainty in HFC reductions to be achieved results from the lack of data for 2022. Countries that submit their KIPs in 2023, at a time when the level of HFC consumption in 2022 is known, will be able to calculate actual HFC reductions to be achieved in stage I in an accurate manner without the need for a future revision.

#### *Starting point for sustained reductions in HFC consumption*

46. The proposal did not establish a starting point for sustained reductions in HFC consumption. The methodology to calculate the starting point under the cost guidelines for HFC phase-down is still under discussion. The Secretariat recommends that the starting point be established once the cost guidelines have been agreed and guidance has been provided on the matter.

#### HFC licensing and quota system

47. Decision 87/50(g) requests the bilateral and implementing agencies, when submitting stage I of the KIPs, to include confirmation that the country has an established and enforceable national system of licensing and quotas for monitoring HFC imports/exports in place, consistent with decision 63/17. Accordingly, the Government of the Niger established a licensing system for HFCs, blends and equipment containing them in its Decree 0225 (December 2020).

48. The quota system was established through an inter-ministerial decree<sup>13</sup> but quotas have not yet been issued. Although the NOU considered issuing a quota in 2023 as an early measure to limit the growth of HFC imports, this option was not pursued given the need to better understand the variations in HFC consumption during the last three years. It was therefore decided that the consumption level for the year 2022 should be known before issuing quotas for HFCs. Because the institutional and legislative capacity for the quota system is already in place, once 2022 HFC consumption is known, the Government of the Niger will be in a position to promptly issue import quotas for HFCs, starting in 2024.

#### Estimation of the overall level of costs for stage I

49. In the absence of cost guidelines, the Secretariat is presenting for the Executive Committee's consideration the level of costs for stage I of the KIP for the Niger as submitted. Upon an analysis of the level of funds proposed, the Secretariat has several observations presented below.

50. Based on the Secretariat's estimation of costs for stage I of the KIP presented in document UNEP/OzL.Pro/ExCom/88/72,<sup>14</sup> the Niger falls in the category of US \$240,000, based on its HCFC baseline of 290.54 mt in the servicing sector. This level will be revised once the HFC consumption baseline is known. Based on the HFC consumption in 2020 and 2021 (i.e., 354.97 mt) this level of funds

<sup>13</sup> Article 25 of Decree No. 2021-161/PRN/MESU/DD of 5 March 2021, stipulates that a joint order of the Minister of the Environment and the Minister of Trade sets the import quotas for HCFCs and HFCs.

<sup>14</sup> Analysis of the levels and modalities of funding for HFC phase-down in the refrigeration servicing sector, later re-issued as document UNEP/OzL.Pro/ExCom/89/8.

would be revised to US \$270,000. The amount requested in the proposal (US \$685,500 plus early activities for US \$80,000) is substantially above these levels.

51. The Government of the Niger estimated the cost of the entire KIP at US \$2,742,000<sup>15</sup> based on the “maintain and build” approach proposed by the TEAP. Twenty-five per cent of these funds are being proposed under stage I to reduce 10 per cent of the baseline. Based on the total amount estimated of US \$2,742,000 for total HFC phase-down (80 per cent reduction of the baseline), the proportional level of funds for achieving the 10 per cent reduction would be US \$342,750.

52. UNIDO explained that the distribution of funding among the stages was not just based on the needed 10 per cent reduction, but also took into consideration the period covered by stage I (eight years up to 2030, more than one third of the duration of the KIP), the fact that no previous action had been taken in the domestic refrigeration and MAC sectors, and the need to strengthen regulations and the centre of excellence. In addition, the commitment from the Government of the Niger to freeze consumption at the 2022 HFC consumption level from 2024 exceeds Montreal Protocol requirements.

53. The Secretariat also acknowledges that the US \$2.74 million indicated by the Government of the Niger for the entire KIP is an indicative figure and that the Executive Committee will only consider at the present meeting the request of funds for stage I (US \$685,500) in light of the information provided.

54. Most of the individual activities included in stage I of the KIP are eligible and have been funded in the past at comparable levels (except for energy-efficiency-related activities, which are currently under discussion by the Executive Committee). The overall level of funds to be allocated to stage I would depend on the scope of the activities proposed, the opportunities to combine efforts with ongoing HPMP activities and the need to address new sectors not covered under the HPMP.

55. Noting that the cost guidelines for HFC phase-down are still under discussion and that the consumption values used as reference for this project would need to be revised once the HFC baseline is known, the Secretariat informed UNIDO that to ensure equal treatment to all countries, any level of funds approved for stage I of the KIP for the Niger would also need to be adjusted in accordance with the levels determined by the cost guidelines in line with the actual HFC consumption baseline.

#### Technical and cost-related issues

56. The Secretariat appreciates the methodology used to prioritize sub-sectors and acknowledges that Article 5 countries have flexibility in prioritizing activities according to national circumstances. In relation to the sectors selected, the Secretariat notes the following:

- (a) *Domestic and commercial refrigeration sectors:* Noting that these two sectors consume 84 per cent of the HFCs consumed in the country, that there are available technologies worldwide (e.g., R-600a for domestic units, R-290 for small commercial units), and that domestic refrigeration has not been addressed directly under the HPMP, KIP activities addressing these sectors could help achieve HFC reductions during stage I;
- (b) *AC sector:* Many of the ongoing HPMP activities already address the residential AC sector, which represents 80 per cent of the remaining HCFC consumption. These activities will have an impact in helping with the introduction of low-GWP alternatives to both HCFC-22 and R-410A in the residential AC sector. Therefore, there are more opportunities to implement KIP activities in combination with ongoing HPMP activities; and

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<sup>15</sup> The Secretariat notes that this value is applied to all 89 LVC countries. The needs of LVCs may vary based on their size, population, HFC consumption, and other national circumstances.

- (c) *MAC sector:* While activities associated with the introduction of low-GWP technology are not possible at the moment given the market circumstances, activities focused on formalizing the sector, strengthening the links between the sector and the industry association, and ensuring good practices, including recovery and recycling of refrigerants, are expected to help achieve HFC reductions in stage I (more than half of the workshops are informal and technicians in the MAC sector have not received assistance under the HPMP).

57. In relation to the simultaneous implementation of the HPMP and the KIP, the submission included an analysis of the existing assistance under the HPMP, with the goal of avoiding duplication in the requests for funding. The Secretariat and UNIDO discussed potential areas where HPMP and KIP activities could be combined, and areas that needed to be implemented separately. Based on the discussion, UNIDO reallocated some of the funds among activities, and the following adjustments were made in relation to the cost of activities:

- (a) *Sector-specific components (refrigeration, AC and MAC):* Noting the ongoing work under the HPMP, mostly addressing the AC sector, US \$63,000 allocated to activities in this sector were reallocated to activities in the domestic and commercial refrigeration sectors, which have the largest share of HFC consumption;
- (b) *Refrigerant management and energy efficiency component:* Activities related to energy efficiency were removed from the KIP, as the Niger can submit a project under the HPMP to implement similar energy-efficiency activities under decision 89/6. The related activities that would be implemented under the HPMP would provide a framework for energy-efficiency considerations in the servicing sector activities under the KIP. The associated funding of US \$25,000 was reallocated to other activities;
- (c) *Regulatory framework component:* Noting that under the HPMP the Niger received US \$80,000 for awareness activities, out of the combined US \$55,000 on awareness activities under the KIP, US \$15,000 were reallocated to procure additional refrigerant identifiers for customs officers; and
- (d) *Early activities:* Noting that the two of the early activities proposed would not be implemented before the remaining activities in stage I, it was agreed to integrate one of them (assistance to importers and distributors) into stage I and to remove the second one (energy-efficiency activity, noting that the Government of the Niger could submit a project under decision 89/6 as part of the HPMP). Accordingly, the US \$80,000 associated with early activities are no longer requested.

58. The Secretariat and UNIDO also discussed the specific technical aspects of the projects included in stage I of the KIP. The following clarifications and additional information were provided:

- (a) The project for SMEs in the commercial refrigeration sector will focus on identifying and assisting SMEs involved in servicing and assembly by providing them with technical assistance to handle technologies alternative to HFCs in the sector, and promoting the use of low-GWP technologies among end-users considering new RAC installations. Potential areas of work are cold rooms and storage, but this will be determined based on the information collected. The Secretariat notes that the level of funds allocated to this activity limits the scale of the project, but considers it a first step to better understanding the installation and assembly of RAC systems in the country, and the potential of enterprises in this sector to influence the adoption of low-GWP alternatives. Given the high consumption of R-404A in the country, if the analysis of the sector identifies opportunities for working with SMEs to reduce the use of R-404A, the country may wish to consider

reallocating funding to this activity in the course of implementation of stage I, in line with existing flexibility policies in the refrigeration servicing sector; and

- (b) Regarding the technology demonstration projects for the domestic refrigeration and residential AC sectors, UNIDO clarified that these projects would assist importers in integrating the R-600a and R-290 technologies (refrigerant, equipment and components) in their supply channels by facilitating the import of a determined number of units for demonstration and performance monitoring and, based on the results, promoting the technologies among end-users. The Secretariat notes that R-600a-based technology is already mature, and R-600a and associated components are already available in many countries. The first tranche only includes funding for domestic refrigeration, and funds for the AC sector will only be requested during the second tranche, allowing time to increase worldwide availability of R-290 refrigerant, equipment and components.

#### Total project cost

59. The total cost for stage I of the KIP was maintained at US \$685,500, as submitted, with a reallocation of funds among activities listed in paragraph 57, as shown in table 8. A detailed overview of activities and costs under the HPMP and the KIP is presented in Annex II.

**Table 8. Revised cost of stage I of the KIP for the Niger (US \$)**

| Activity  | Implementing agency | Cost by sector (US \$) |               |                | Total cost (US \$) |
|---|---------------------|------------------------|---------------|----------------|--------------------|
|   |                     | Refrigeration          | AC            | MAC            |                    |
| <i>Activities addressing the priority sectors</i>                               |                     |                        |               |                |                    |
| Support for industry associations   | UNEP                | 13,000                 | 0             | 0              | 13,000             |
| Technician training*  |                     | 45,000                 | 15,000        | 45,000         | 105,000            |
| Extending the technician certification scheme                                   |                     | 0                      | 0             | 14,000         | 14,000             |
| Provision of tools and equipment for training**                                 | UNIDO               | 50,000                 | 0             | 45,000         | 95,000             |
| Development of codes of practice  |                     | 0                      | 0             | 14,000         | 14,000             |
| SME programmes  |                     | 35,000                 | 0             | 0              | 35,000             |
| Technology demonstration  |                     | 70,000                 | 45,000        | 0              | 115,000            |
| <b>Sub-total for activities addressing priority sectors</b>                     |                     | <b>213,000</b>         | <b>60,000</b> | <b>118,000</b> | <b>391,000</b>     |
| <i>Activities common to all sectors</i>   |                     |                        |               |                |                    |
| Activity  |                     |                        |               | Agency         | Cost (US \$)       |
| <i>Refrigerant management</i>   |                     |                        |               |                |                    |
| Assessment of the economic feasibility of reclamation facilities                |                     |                        |               | UNIDO          | 5,000              |
| Establish sound management of non-reusable refrigerants                         |                     |                        |               |                | 40,500             |
| Study on the management of end-of-life of appliances and HFC banks              |                     |                        |               |                | 20,000             |
| <b>Sub-total for refrigerant management</b>                                     |                     |                        |               |                | <b>65,500</b>      |
| <i>Regulatory framework and control mechanisms</i>                              |                     |                        |               |                |                    |
| Strengthening the HFC licensing and quota system                                |                     |                        |               | UNIDO          | 3,000              |
| Developing, revising, and adopting standards and labeling of refrigerants       |                     |                        |               |                | 15,000             |
| Licensing of service workshops  |                     |                        |               |                | 10,000             |
| Awareness-raising campaign addressed to the government                          |                     |                        |               |                | 40,000             |
| Strengthening record-keeping and reporting by enterprises                       |                     |                        |               |                | 10,000             |
| Provision of refrigerant identifiers to customs                                 |                     |                        |               |                | 30,000             |
| Strengthening HFC import records by customs                                     |                     |                        |               |                | 10,000             |
| Training 120 customs officers and enforcement officers, developing a curriculum |                     |                        |               | UNEP           | 40,000             |
| Improving continuous market monitoring, including surveys                       |                     |                        |               |                | 10,000             |
| <b>Sub-total for the regulatory framework and control mechanisms</b>            |                     |                        |               |                | <b>168,000</b>     |
| Coordination and management of KIP implementation                               |                     |                        |               | UNIDO          | 61,000             |



| Activity                            | Implementing agency | Cost by sector (US \$) |    |     | Total cost (US \$) |
|-------------------------------------|---------------------|------------------------|----|-----|--------------------|
|                                     |                     | Refrigeration          | AC | MAC |                    |
| <b>Total for stage I of the KIP</b> |                     |                        |    |     | <b>685,500</b>     |
| <b>UNIDO</b>                        |                     |                        |    |     | <b>493,500</b>     |
| <b>UNEP</b>                         |                     |                        |    |     | <b>192,000</b>     |

\*180 in the refrigeration sector, 60 in the AC sector and 180 in the MAC sector.

\*\*List of tools and equipment to be determined by sector based on needs.

60. The first funding tranche of stage I of the KIP in the total amount of US \$264,200 will be implemented between January 2023 and December 2026 and will include the following activities:

- (a) *Domestic and commercial refrigeration sector (US \$118,200)*: Provision of tools and equipment (list to be determined based on needs) to the refrigeration association and vocational schools for training, formulation of the plan to assist commercial refrigeration SMEs, and initiation of the technology demonstration in the domestic refrigeration sector (UNIDO) (US \$98,000); support for the refrigeration association and training on R-600a for 60 refrigeration technicians not trained under the HPMP (UNEP) (US \$20,200);
- (b) *MAC (US \$66,000)*: Development of a code of good practices for the MAC sector, and procurement of tools and equipment (list to be determined based on needs) and demonstration units for MAC technician training workshops (UNIDO) (US \$44,000); training of 60 MAC technicians, and preparation of requirements to include MAC in the technician certification programme (UNEP) (US \$22,000);
- (c) *Refrigerant management (UNIDO) (US \$20,000)*: Assessment of the economic feasibility of reclamation facilities (US \$5,000), and recruitment of a national expert to develop a strategy for managing non-recyclable refrigerants (US \$15,000);
- (d) *Regulatory framework and control mechanisms (US \$40,500)*: Strengthening the HFC licensing and quota system, development of standards and labeling of refrigerants, awareness-raising campaign to promote the KIP activities addressed to policy makers, practitioners, end-users and workshops, periodic assessment of importers' records and awareness raising on mandatory record-keeping (UNIDO) (US \$13,000); supporting the platform recently created under the HPMP to include the registration of HFC imports in the electronic customs system, training of 40 customs officers in the registration of HFC imports, development of a curriculum for customs and enforcement officers, and conducting a market survey to assess the impact of illegal trade of refrigerants and uncover the means used to smuggle refrigerants into the country (UNEP) (US \$27,500); and
- (e) *Project coordination and monitoring: (UNIDO) (US \$19,500)*: including international and national consultants (US \$8,000), travel (US \$8,000) and consultation meetings (US \$3,500).

#### Sustainability of the HFC phase-down and assessment of risks

61. The commitment and activities under stage I of the KIP will be sustained over time with the implementation and strengthening of the licensing and quota system for HFCs, continuous market monitoring including surveys, strengthening the HFC imports records by customs and the record keeping by enterprises, and by continuous monitoring of all the activities being implemented.

62. UNIDO provided information on the assessment undertaken on project implementation risks for stage I of the KIP, indicating that a coordinated roadmap of activities for the implementing agencies, the NOU and the Steering Committee would help ensure sufficient and timely funding and implementation.

Potential lack of engagement by key stakeholders would be addressed through the awareness activities included in the project. The potential risk of non-compliance is considered low and will be mitigated by establishing communication with importers once the 2022 consumption is known, and by setting the quota for 2024 during the first half of 2023.

63. UNIDO also reported that the Government would consider establishing quotas on HFC-based domestic refrigerators for stage II based on the uptake of R-600a technology in the country, as well as a ban on HFC-23 to avoid the risk of its introduction into the country, where it is neither produced nor imported at present.

64. The risk of technologies promoted through the KIP not being accessible to the country will be mitigated by engaging importers and distributors in the planned demonstration projects to facilitate their access to alternative technologies. Finally, the risk of delays on activities requiring regional coordination (e.g., regional regulations) will be mitigated by implementing agencies facilitating dialogue among the NOUs of the member states, and including national representatives of the regional bodies on the Steering Committee.

#### Impact on the climate

65. The activities planned by the Niger, including its efforts to promote low-GWP alternatives, as well as refrigerant recovery and reuse, indicate that the implementation of stage I of the KIP will reduce the emission of refrigerants into the atmosphere, resulting in climate benefits. A calculation of the impact on the climate of the activities in the KIP indicates that by 2030 the Niger will have mitigated 720,608 CO<sub>2</sub>-eq tonnes of HFCs, calculated as the difference between the business-as-usual scenario and the HFC reduction scenario presented in table 4.

#### **Co-financing**

66. The establishment of a certification scheme and a licensing system for workshops, and the strengthening of records by customs and enterprises, are expected to continue to be implemented by local institutions in a self-financed manner once the project is completed. As the Niger is a member of the Economic Community of West African States (ECOWAS), a potential co-financing source is the Ecofridge initiative, which will finance the purchase of around 50,000 energy-efficient R-600a-based refrigerators for distribution in ECOWAS countries. The initiative includes complementary activities such as recycling of old equipment, market surveillance, and monitoring and awareness activities.

#### **2022-2024 draft business plan of the Multilateral Fund**

67. UNIDO and UNEP are requesting US \$685,500, plus agency support costs, for the implementation of stage I of the KIP for the Niger. The total requested value of US \$286,876 including agency support costs for the period of 2022-2024 has not been included in the business plan for the respective period.

#### **Draft Agreement**

68. A draft Agreement between the Government of the Niger and the Executive Committee for stage I of the KIP has not been prepared. The Secretariat notes the need to design a draft Agreement for stage I of the KIPs based on the results of discussions on the cost guidelines. While the template Agreement used for HPMPs could serve as a basis, some key aspects, including the conditions for the release of tranches, Appendices 1-A and 2-A, the roles of implementing agencies, and the penalty clause, will need to be further analyzed to determine to what extent they could be used for the KIPs. In the absence of an Agreement, UNIDO provided a table including the estimated HFC reduction commitments and the tranches to be requested during the period covered by stage I of the KIP, as shown in Annex I.

69. If the Executive Committee so wishes, the funds for stage I of the KIP for the Niger could be approved in principle, and funds for the first tranche could be approved on the understanding that the Agreement will be prepared and presented at a future meeting, before the submission of the second tranche. Once the draft Agreement template is approved, it could be applied to the Niger and other countries. The Secretariat has included this issue in document UNEP/OzL.Pro/ExCom/91/28 (Overview of issues identified during project review), suggesting that a template Agreement for stage I of the KIPs be prepared for consideration by the Executive Committee at a future meeting.

## RECOMMENDATION

70. In the absence of the HFC cost funding guidelines, the Secretariat has prepared, on an exceptional basis, the following recommendation for the consideration of the Executive Committee.

71. The Executive Committee may wish to consider:

- (a) Whether to approve, in principle, stage I of the Kigali HFC implementation plan (KIP) for the Niger for the period 2023–2030 to reduce HFC consumption by at least 10 per cent of the country's baseline, in the amount of [US \$745,005], consisting of [US \$493,500], plus agency support costs of [US \$34,545] for UNIDO and [US \$192,000], plus agency support costs of [US \$24,960] for UNEP;
- (b) Noting:
  - (i) That once the HFC baseline for the Niger is established, the HFC reductions referred to in sub-paragraph (a) above will be revised and the maximum allowable consumption of HFC from 2024 to 2030 will be either the actual 2022 HFC consumption or the Montreal Protocol control limits, whichever is lower;
  - (ii) That once the cost guidelines for HFC phase-down determine the level and modalities of funding for the servicing sector for Article 5 countries, the level of funds approved for stage I of the KIP for the Niger referred to in sub-paragraph (a) will be revised in accordance with the levels determined by the cost guidelines;
  - (iii) That the Government of the Niger will establish its starting point for sustained aggregate reductions in HFC consumption on the basis of guidance provided by the cost guidelines for HFC phase-down;
  - (iv) That once the starting point for sustained aggregate reductions in HFC consumption is established, the level of HFC reductions under stage I of the KIP will be deducted from the remaining HFC consumption eligible for funding;
- (c) Whether to approve the first tranche of stage I of the KIP for the Niger, and the corresponding tranche implementation plan, in the amount of US \$286,876, consisting of US \$194,500, plus agency support costs of US \$13,615 for UNIDO, and US \$69,700, plus agency support costs of US \$9,061 for UNEP; and
- (d) Requesting the Government of the Niger, UNIDO, and the Secretariat to finalize the draft Agreement between the Government of the Niger and the Executive Committee for the reduction in consumption of HFCs, and submit it to a future meeting once the draft Agreement template is prepared by the Secretariat and approved by the Executive Committee.



## Annex I

**Schedule of HFC and HCFC commitments and funding tranches for the Niger  
under the Kigali HFC implementation plan and the HCFC phase-out management plan**

**Kigali HFC implementation plan**

| Row | Particulars   | 2022    | 2023 | 2024      | 2025      | 2026      | 2027      | 2028      | 2029      | 2030      | Total   |
|-----|---|---------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| 1.1 | Montreal Protocol reduction schedule of Annex F (CO <sub>2</sub> -eq tonnes)* | n/a     | n/a  | 1,346,892 | 1,346,892 | 1,346,892 | 1,346,892 | 1,346,892 | 1,212,203 | 1,212,203 | n/a     |
| 1.2 | Maximum allowable total consumption of Annex F (CO <sub>2</sub> -eq tonnes)*  | n/a     | n/a  | 1,217,808 | 1,212,568 | 1,207,329 | 1,202,089 | 1,196,849 | 1,191,609 | 1,186,369 | n/a     |
| 2.1 | Lead IA (UNIDO) agreed funding (US \$)  | 194,500 | 0    | 0         | 0         | 213,000   | 0         | 0         | 0         | 86,000    | 493,500 |
| 2.2 | Support costs for Lead IA (US \$)   | 13,615  | 0    | 0         | 0         | 14,910    | 0         | 0         | 0         | 6,020     | 34,545  |
| 2.3 | Cooperating IA (UNEP) agreed funding (US \$)                                  | 69,700  | 0    | 0         | 0         | 57,400    | 0         | 0         | 0         | 64,900    | 192,000 |
| 2.4 | Support costs for Cooperating IA (US \$)                                      | 9,061   | 0    | 0         | 0         | 7,462     | 0         | 0         | 0         | 8,437     | 24,960  |
| 3.1 | Total agreed funding (US \$)  | 264,200 | 0    | 0         | 0         | 270,400   | 0         | 0         | 0         | 150,900   | 685,500 |
| 3.2 | Total support costs (US \$)   | 22,676  | 0    | 0         | 0         | 22,372    | 0         | 0         | 0         | 14,457    | 59,505  |
| 3.3 | Total agreed costs (US \$)  | 286,876 | 0    | 0         | 0         | 292,772   | 0         | 0         | 0         | 165,357   | 745,005 |

\* Estimated values to be revised when the HFC baseline is established

**HCFC phase-out management plan**

| Row | Particulars  | 2022    | 2023  | 2024  | 2025    | 2026 | 2027    | 2028 | 2029 | 2030    | Total     |
|-----|--|---------|-------|-------|---------|------|---------|------|------|---------|-----------|
| 1.1 | Montreal Protocol reduction schedule of Annex C (ODP tonnes) | 10.38   | 10.38 | 10.38 | 5.19    | 5.19 | 5.19    | 5.19 | 5.19 | 0.0     | n/a       |
| 1.2 | Maximum allowable total consumption of Annex C (OSP tonnes)  | 10.38   | 10.38 | 10.38 | 5.19    | 5.19 | 5.19    | 5.19 | 5.19 | 0.0     | n/a       |
| 2.1 | Lead IA (UNIDO) agreed funding (US \$)                       | 243,500 | 0     | 0     | 166,000 | 0    | 167,400 | 0    | 0    | 118,100 | 695,000   |
| 2.2 | Support costs for Lead IA (US \$)                            | 17,045  | 0     | 0     | 11,620  | 0    | 11,718  | 0    | 0    | 8,267   | 48,650    |
| 2.3 | Cooperating IA (UNEP) agreed funding (US \$)                 | 108,000 | 0     | 0     | 84,500  | 0    | 90,000  | 0    | 0    | 62,500  | 345,000   |
| 2.4 | Support costs for Cooperating IA (US \$)                     | 14,040  | 0     | 0     | 10,985  | 0    | 11,700  | 0    | 0    | 8,125   | 44,850    |
| 3.1 | Total agreed funding (US \$)                                 | 351,500 | 0     | 0     | 250,500 | 0    | 257,400 | 0    | 0    | 180,600 | 1,040,000 |
| 3.2 | Total support costs (US \$)                                  | 31,085  | 0     | 0     | 22,605  | 0    | 23,418  | 0    | 0    | 16,392  | 93,500    |
| 3.3 | Total agreed costs (US \$)                                   | 382,585 | 0     | 0     | 273,105 | 0    | 280,818 | 0    | 0    | 196,992 | 1,133,500 |



## Annex II

## Implementation of both the HCFC phase-out management plan (HPMP) and the Kigali HFC implementation plan (KIP) in the Niger (US \$)

| Area of work   | HPMP   |                  | KIP  |                | Combined cost    |
|--|--|------------------|--|----------------|------------------|
|  | Activity   | Cost             | Activity   | Cost           |                  |
| Updating the regulatory framework                    | Update of the national regulatory framework, quota system, and a study on safety standards for flammable refrigerants, Licensing imports of HCFC-22-based equipment and eventual ban | 55,000           | Strengthening the HFC licensing and quota system, developing, revising and adopting standards and labeling of refrigerants, licensing of service workshops | 28,000         | 83,000           |
| Training of customs officers                         | Training of 640 customs and enforcement officers   | 100,000          | Training 120 customs and enforcement officers  | 30,000         | 130,000          |
| Provision of tools to customs                        | Provision of 10 refrigerant identifiers  | 43,300           | Provision of 7 refrigerant identifiers to customs  | 30,000         | 73,300           |
| Training (RAC technicians)                           | Training of 800 technicians  | 190,000          | Training 60 AC technicians   | 15,000         | 205,000          |
| Training of refrigeration technicians                |  |                  | Training 180 domestic refrigeration technicians  | 45,000         | 45,000           |
| Training of MAC technicians                          |  |                  | Training 180 MAC technicians   | 45,000         | 45,000           |
| Provision of tools for AC training                   | Provision of tools for four vocational schools and seven branches of the association   | 118,100          |  |                | 118,100          |
| Provision of tools for refrigeration training        |  |                  | Provision of tools and equipment (refrigeration)   | 50,000         | 50,000           |
| Provision of tools for MAC training                  |  |                  | Provision of tools and equipment (MAC)   | 45,000         | 45,000           |
| Certification of technicians                         | Establishment of certification scheme  | 40,000           | Establishment of certification scheme (MAC)  | 14,000         | 54,000           |
| Development of codes and SOP                         | Development of code of practice (RAC)  | 23,500           | Development of code of practice for MAC  | 14,000         | 37,500           |
| Updating curricula                                   | Updating curricula (vocational schools)  | 15,000           | Developing a curriculum (customs officers)   | 10,000         | 25,000           |
| Centre of excellence                                 | Establishment of centre of excellence and 70 R&R units   | 290,100          | Assessment of the economic feasibility of reclamation facilities   | 5,000          | 295,100          |
| Awareness raising                                    | Awareness to end-users and government institutions   | 80,000           | Awareness to end-users (all priority sectors)  | 40,000         | 120,000          |
| Consumption monitoring                               |  |                  | Strengthening of HFC import records by customs, and record keeping by companies, improving market monitoring   | 30,000         | 30,000           |
| Supporting the association                           |  |                  | Supporting the industry association (all sectors)  | 13,000         | 13,000           |
| Assistance to SMEs                                   |  |                  | SME programme (commercial refrigeration)   | 35,000         | 35,000           |
| Technology demonstrations                            |  |                  | Technology demonstration programme (domestic refrigeration) (residential AC)   | 115,000        | 115,000          |
| Studies related to refrigerant handling and disposal |  |                  | Studies on sound management of non-reusable refrigerants and study end-of-life appliances and HFC banks  | 60,500         | 60,500           |
| Coordination and management                          |  | 85,000           | Coordination and management  | 61,000         | 146,000          |
|  | <b>Total for the HPMP</b>  | <b>1,040,000</b> | <b>Total for the KIP</b>   | <b>685,500</b> | <b>1,725,500</b> |