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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-third Meeting
Montreal, 15-19 December 2023
Items 9(c) and 9(d) of the provisional agenda¹

PROJECT PROPOSALS: TRINIDAD AND TOBAGO

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

Phase-out

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

Phase-down

- Kigali HFC implementation plan (stage I, first tranche) UNDP

¹ UNEP/OzL.Pro/ExCom/93/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Trinidad and Tobago

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage II)	UNDP (lead)	86 th	100% phase-out by 2030

(II) LATEST ARTICLE-7 DATA (Annex C Group I)	Year: 2022	12.79 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2022	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					12.78				12.78
HCFC-123					0.01				0.01

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	46.00	Starting point for sustained aggregate reductions:	46.00
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	46.00	Remaining:	0.00

(V) ENDORSED BUSINESS PLAN		2023	2024	2025	Total
UNDP	ODS phase-out (ODP tonnes)	11.32	0.00	0.00	11.32
	Funding (US \$)	711,559	0	0	711,559

(VI) PROJECT DATA			2020	2021-2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Montreal Protocol consumption limits (ODP tonnes)			29.90	29.90	29.90	29.90	15.00	15.00	15.00	15.00	15.00	0.00	n/a
Maximum allowable consumption (ODP tonnes)			28.50	28.50	28.50	28.50	15.00	15.00	15.00	1.15	1.15	0.00	n/a
Funding agreed in principle (US \$)	UNDP	Project costs	498,756	0	665,008	0	0	332,504	0	0	166,252	0	1,662,520
		Support costs	34,913	0	46,551	0	0	23,275	0	0	11,638	0	116,376
Funds approved by ExCom (US \$)		Project costs	498,756	0	0	0	0	0	0	0	0	0	498,756
		Support costs	34,913	0	0	0	0	0	0	0	0	0	34,913
Total funds recommended for approval at this meeting (US \$)		Project costs	0	0	665,008	0	0	0	0	0	0	0	665,008
		Support costs	0	0	46,551	0	0	0	0	0	0	0	46,551

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Trinidad and Tobago, UNDP as the designated implementing agency has submitted a request for funding for the second tranche of stage II of the HCFC phase-out management plan (HPMP), in the amount of US \$665,008, plus agency support costs of US \$46,551.² The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2020 to 2022, and the tranche implementation plan for 2024 to 2026.

Report on HCFC consumption

2. The Government of Trinidad and Tobago reported a consumption of 12.79 ODP tonnes of HCFCs in 2022, which is 72.2 per cent below the HCFC baseline for compliance. The 2018-2022 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in Trinidad and Tobago (2018-2022 Article 7 data)

HCFC	2018	2019	2020	2021	2022	Baseline
Metric tonnes (mt)						
HCFC-22	284.52	379.07	263.13	159.54	232.43	782.86
HCFC-123	0.25	0.25	1.37	1.33	0.26	6.74
HCFC-124	0.00	0.00	0.00	0.00	0.00	23.60
HCFC-141b	0.00	0.00	0.00	0.00	0.00	20.55
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.00
Total (mt)	284.77	379.32	264.50	160.87	232.69	833.75
ODP tonnes						
HCFC-22	15.65	20.85	14.47	8.77	12.78	43.10
HCFC-123	0.01	0.01	0.03	0.03	0.01	0.10
HCFC-124	0.00	0.00	0.00	0.00	0.00	0.50
HCFC-141b	0.00	0.00	0.00	0.00	0.00	2.30
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.00
Total (ODP tonnes)	15.65	20.85	14.50	8.80	12.79	46.00

3. The consumption of HCFCs has been decreasing since the implementation of HPMP activities including controls on HCFC imports through the licensing system, training on good service practices and adoption of alternatives to HCFCs (e.g., HFC-134a, R-404A, R-507A) in refrigeration and air-conditioning (RAC) applications. The significant decrease in 2020 and 2021 was mainly due to the restrictions related to the COVID-19 pandemic resulting in lower demand of HCFCs for servicing. The increase in 2022 is considered temporary as it was due to post-COVID-19 recovery.

Country programme implementation report

4. The Government of Trinidad and Tobago reported HCFC sector consumption data under the 2022 country programme (CP) implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Verification report

5. The verification report confirmed that the Government was implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs reported under Article 7 of the Montreal Protocol for 2020 to 2022 was correct (as shown in table 1 above). The verification report recommended closer monitoring of import quotas with the importers so that the quotas can be reallocated on time and the necessary HCFC purchases can be made during the year if necessary. UNDP confirmed

² As per the letter of 9 October 2023 from the Ministry of Planning and Development of Trinidad and Tobago to UNDP.

that the Government would take necessary steps relating to this during the implementation of the second tranche.

Status of implementation of stage I of the HCFC phase-out management plan

6. As reported to the 91st meeting,³ stage I of the HPMP was completed as of 31 December 2021 and the project completion report was submitted.

Progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan

Legal framework

7. The Import and Export Control Regulations for the import of ODS, mixtures containing ODS, and ODS-based equipment including HCFCs, was amended in 2013 to include HCFC blends. Since 1 January 2015, the import of HCFC-based equipment is prohibited; the import of HCFC-141b in bulk or contained in pre-blended polyols is also prohibited as no license is issued for the import of these substances. The Government of Trinidad and Tobago has a climate policy to reduce and avoid the emission of greenhouse gases, which applies to HCFCs to the extent feasible. In March 2018, the Government approved the national guidelines for good refrigeration servicing and maintenance practices to avoid leakage of refrigerants. The Government has implemented a licensing system for HFCs and is expected to implement the HFC quota system from the year 2024.

8. The national ozone unit (NOU) developed and enforced standards related to handling, storage and technical specifications for refrigerant cylinders and equipment used in the RAC sector, in coordination with the Trinidad and Tobago Bureau of Standards, and is currently developing safety requirements for handling flammable refrigerants.

Refrigeration servicing sector

9. The following activities were implemented:

- (a) Training of 125 customs and enforcement officers, including 70 women, on the implementation of HCFC regulations and accurate HCFC data reporting;
- (b) Training of 19 trainers and 578 technicians including 16 women on good refrigeration management practices, recovery, recycling and reclamation of refrigerants and safe use of alternative technologies; provision of 10 technical training kits including one hydrocarbon (HC) air conditioner to 10 training schools; recertification of 119 service technicians including three women; one consultative meeting with 36 participants including nine women, with service sector stakeholders on the recovery and reuse of refrigerants; and
- (c) Eight awareness and outreach programmes and events, and other sensitisation workshops for facilities management staff, RAC equipment importers and service sector personnel on different activities relating to the HPMP and new regulations relating to HFCs among different national stakeholders with a focus on promoting the adoption of low-global-warming-potential (GWP) alternatives, recovery and reuse of HCFCs and certification of technicians.

³ UNEP/OzL.Pro/ExCom/91/18, paragraph 69

Project implementation and monitoring

10. The NOU managed the project activities including planning, monitoring and reporting relating to the first tranche; the funds were spent on staff and consultants (US \$33,061) and travel expenses (US \$2,475).

Level of fund disbursement

11. As of September 2023, of the US \$498,756 approved so far, US \$316,771 (63.5 per cent) had been disbursed. The balance of US \$181,985 will be disbursed in 2024.

Implementation plan for the second tranche of stage II of the HCFC phase-out management plan

12. The following activities will be implemented between January 2024 and June 2026:

- (a) Training of 50 customs and enforcement officers on controlling and monitoring HCFC imports; two training courses with customs brokers and importers (about 30 participants each) on HCFC import/export data reporting and monitoring to prevent illegal trade (US \$54,667);
- (b) Training of 250 service technicians and 10 trainers on good service practices including recovery and reuse of HCFCs and safe use of low-GWP refrigerants and distribution of training and information materials to service technicians on good servicing practices of equipment using low-GWP refrigerants (US \$327,382); procurement of refrigerant recovery equipment with accessories (e.g., cylinders, refrigerant recovery units); awareness and outreach on implementation (US \$223,988);
- (c) Awareness and outreach activities relating to the adoption of low-GWP refrigerants as alternatives to HCFCs, recovery and reuse of HCFCs, training and certification of service technicians (US \$25,333); and
- (d) Project monitoring (UNDP) (US \$33,638): Coordination and management of the HPMP including project monitoring and reporting; the expenditures would include staff and consultants (US \$27,510), travel (US \$4,800) and workshops and meetings (US \$1,328).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan

Legal framework

13. The Government of Trinidad and Tobago has already issued HCFC import quotas for 2023 at 24.29 ODP tonnes, which is lower than the Montreal Protocol control targets.

Refrigeration servicing sector

14. The Secretariat requested clarifications on the implementation of activities relating to recovery and reuse of HCFCs. UNDP explained that the Government of Trinidad and Tobago does not have any specific regulations to make recovery and reuse of refrigerants mandatory; training activities in the service sector provide information and training to technicians and trainers on the importance and advantage of recovery

and reuse of refrigerants; in the second tranche, they would install the refrigerant recovery system and implement training of 250 technicians on refrigerant recovery and reuse, which is expected to result in lower demand for HCFC-based equipment over time.

15. UNDP confirmed that no retrofit of equipment using flammable refrigerants is undertaken in the country and that the Government is aware of the relevant Executive Committee decisions;⁴ the training programmes include information on the safe use of flammable refrigerants while servicing RAC equipment.

Gender policy implementation

16. The Government of Trinidad and Tobago and UNDP are fully committed to implementing the operational gender mainstreaming policy of the Multilateral Fund. The Government would continue to work with the national stakeholders to maximise participation of women in different HPMP activities. Currently, in training programmes and other HPMP activities, women participation is encouraged, and gender-disaggregated data is captured and reported. Through a combination of different interventions, the Government is expecting to overcome the existing challenges in order to increase participation of women in HPMP activities including a larger number of women working as RAC technicians.

Sustainability of the HCFC phase-out and assessment of risks

17. The Government of Trinidad and Tobago continues to implement training activities for service technicians which results in the adoption of good service practices and sustainable safe use of low-GWP alternatives; through their ongoing training of customs and enforcement officers, the consumption of HCFCs is monitored and controlled. The Government is also implementing awareness activities to maximise the adoption of low-GWP alternative-based RAC equipment and facilitate the certification of service technicians. A combination of the above activities has contributed to the reduction of HCFC consumption. The risks relating to lower adoption of low-GWP technologies is being addressed through awareness raising on availability, encouraging the adoption of such equipment and providing training to ensure safe service practices with low-GWP technologies.

Conclusion

18. The Government of Trinidad and Tobago has reduced its consumption of HCFCs to 12.79 ODP tonnes in 2022 which is 72.2 per cent below the HCFC baseline for compliance and 57.2 per cent below the consumption target for that year. The Government is implementing the licensing and quota system for HCFCs; the activities relating to training and capacity building of service technicians including the certification system, as well as training of customs and enforcement officers are progressing. Awareness and outreach activities relating to HPMP implementation are ongoing. Of the total funds approved under the first tranche, 63.5 per cent was disbursed. Under the second tranche, the Government would continue to provide training activities for service technicians, implement a refrigerant recovery programme, conduct training of customs and enforcement officers on controlling and monitoring HCFC imports and exports and awareness and outreach activities covering the adoption of low-GWP alternative technologies, certification of technicians and maximising refrigerant recovery to reduce demand for virgin HCFCs.

RECOMMENDATION

19. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan (HPMP) for Trinidad and Tobago, and further recommends blanket approval of the second tranche of stage II of the

⁴ Decisions 72/17 and 73/34

HPMP for Trinidad and Tobago, and the corresponding 2024-2026 tranche implementation plan, at the funding level shown in the table below.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage II, second tranche)	665,008	46,551	UNDP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Trinidad and Tobago

(I) PROJECT TITLE	AGENCY
Kigali HFC implementation plan (stage I)	UNDP (lead)

(II) LATEST ARTICLE 7 DATA (Annex F)	Year: 2022	2,038.93 mt	4,597,414 CO ₂ -eq tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (CO₂-eq tonnes)							Year: 2022		
Chemical	Aerosol	Foam	Firefighting	AC and refrigeration		Servicing	Solvent	Other	Total sector consumption
				Manufacturing					
				AC	Other				
HFC-32						1,600			1,600
HFC-125						0			0
HFC-134a						1,201,429			1,201,429
HFC-143a						0			0
HFC-152a						131			131
HFC-227ea						27,434			27,434
HFC-365mfc						21,922			21,922
R-404A						1,742,367			1,742,367
R-407A						0			0
R-407C						139,070			139,070
R-407F						2,646			2,646
R-408A						0			0
R-410A						1,157,080			1,157,080
R-417A						5,302			5,302
R-438A						3,623			3,623
R-448A						14			14
R-449A						6,282			6,282
R-507A						288,514			288,514
R-507C						0			0

(IV) AVERAGE 2020-2022 HFC CONSUMPTION IN SERVICING	2,082.90 mt	4,733,814 CO ₂ -eq tonnes
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(V) CONSUMPTION DATA (CO₂-eq tonnes)			
Baseline: average 2020-2022 HFC consumption plus 65% of HCFC baseline	5,681,787	Starting point for sustained aggregate reductions	TBD
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved	0	Remaining	TBD

(VI) ENDORSED BUSINESS PLAN		2023	2024	2025	Total
UNDP	HFC phase-down (CO ₂ -eq tonnes)	0.0	0.0	0.0	0.0
	Funding (US \$)	707,597	0	0	707,597

(VII) PROJECT DATA		2023	2024	2025	2026	2027	2028	2029	Total	
Consumption (CO ₂ .eq tonnes)	Montreal Protocol limits	n/a	5,681,787	5,681,787	5,681,787	5,681,787	5,113,608	5,113,608	n/a	
	Maximum allowable	n/a	5,681,787	5,681,787	5,681,787	5,681,787	5,113,608	5,113,608	n/a	
Amounts requested in principle (US \$)	UNDP	Project costs	543,249	0	0	516,677	0	0	117,769	1,177,695
		Support costs	38,028	0	0	36,167	0	0	8,244	82,439
Amounts recommended in principle (US \$)	Total project costs		543,249	0	0	516,677	0	0	117,769	1,177,695
	Total support costs		38,028	0	0	36,167	0	0	8,244	82,439
	Total funds		581,277	0	0	552,844	0	0	126,013	1,260,134

(VIII) Request for approval of funding for the first tranche (2023)		
Implementing agency	Funds recommended (US \$)	Support costs (US \$)
UNDP	543,249	38,028
Total	543,249	38,028

Secretariat's recommendation:	Individual consideration – all technical and cost issues resolved
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PROJECT DESCRIPTION

20. On behalf of the Government of Trinidad and Tobago, UNDP as the designated implementing agency has submitted a request for stage I of the Kigali HFC implementation plan (KIP), at the amount of US \$1,177,695, plus agency support costs of US \$82,439, as originally submitted.⁵

21. The implementation of stage I of the KIP will assist the Government of Trinidad and Tobago in meeting the target of 10 per cent reduction from its HFC baseline consumption by 1 January 2029.

22. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$545,107, plus agency support costs of US \$38,158 for UNDP, as originally submitted, for the period of January 2024 to December 2026.

Background

23. The Government of Trinidad and Tobago ratified all amendments to the Montreal Protocol, including the Kigali Amendment on 17 November 2017. Trinidad and Tobago has an HCFC consumption baseline of 46.0 ODP tonnes or 833.75 metric tonnes (mt) and is set to completely phase out consumption of HCFCs by 1 January 2030.⁶

Status of implementation of the HCFC phase-out management plan

24. Stage I of the HPMP for Trinidad and Tobago was approved at the 64th meeting of the Executive Committee⁷ to meet the 35 per cent reduction from the baseline by 2020, resulting in the phase-out of 17.7 ODP tonnes of HCFCs, at a total cost of US \$1,462,733, plus agency support costs.

25. Stage II of the HPMP for Trinidad and Tobago was approved at the 86th meeting⁸ to reduce HCFC consumption by 100 per cent from the baseline by 2030, at a total cost of US \$1,662,520, plus agency support costs. Stage II of the HPMP will be completed by 31 December 2031, as stipulated in the Agreement between the Government of Trinidad and Tobago and the Executive Committee.

Status of implementation of HFC-related activities

26. At the 74th meeting, Trinidad and Tobago received funding to conduct a survey on the use of alternatives to ozone depleting substances (ODS) (US \$110,000), which was completed in September 2017. At the 80th meeting, the country received funding to implement the enabling activities for HFC phase-down (US \$150,000), which were completed in June 2020. These activities assisted the country *inter alia* in reviewing existing legislation on the identification, management and control of substances controlled by the Montreal Protocol; identifying gaps in the legislation framework and in implementation capacity, that need to be addressed for the implementation of the Kigali Amendment and proposing interventions to better integrate stakeholders, undertake sound consultation processes and strengthen the ratification process; designing a quota distribution model for HFCs taking into consideration that substances need to be reported in CO₂-equivalent (CO₂-eq) tonnes and training for national ozone officers and other related stakeholders on energy efficiency; raising awareness on the ratification and implementation processes of the Kigali Amendment; developing a cooling strategy proposal; and reviewing HFC data consumption and preparing

⁵ As per the letter of 24 August 2023 from the Ministry of Planning and Development of Trinidad and Tobago to UNDP.

⁶ Except for those HCFCs allowed for a servicing tail between 2030 and 2040, where required, consistent with the provisions of the Montreal Protocol.

⁷ Decision 64/46

⁸ Decision 86/81

a study on consumption and projection, including an analysis of energy consumption in the main sectors and substances.

Stage I of the Kigali HFC implementation plan

Policy, regulatory and institutional frameworks

27. The ODS licensing system was established in Trinidad and Tobago in 1999, and is implemented by the Ministry of Trade and Industry, the Bureau of Standards, the Customs and Excise Division, the Pesticides and Toxic Chemical Inspectorate and the NOU. The policy of the licensing system is to reduce the importation of ODS over time consistent with the phase-out schedule of the Montreal Protocol. This has been achieved by the inclusion of ODS and ODS-dependent technology on the Import and Export Negative Lists with only licensed importers being allowed to import controlled quantities of the substances. The Import and Export Negative Lists have been periodically updated to reflect the amendments to the Montreal Protocol, including the Kigali Amendment.

28. HFCs are classified as toxic chemicals under the Pesticides and Toxic Chemicals Act 1979 and the Toxic Chemicals Regulations 2007 of Trinidad and Tobago, and importers are required to apply for an import license and premise registration from the Registrar of Pesticides and Toxic Chemicals under the Chemistry, Food and Drugs Division of the Ministry of Health.

29. In addition, the Government of Trinidad and Tobago has a Climate Change Policy, approved in 2011, which has among its objectives to reduce or avoid greenhouse gases from all emitting sectors. This policy also applies, to the extent possible, to the selection of equipment replacement technologies.

30. A new regulation has been designed to establish a quota mechanism for the import of HFCs, in pure form or blends. The import of HFCs will be reduced in line with the country's consumption reduction plan, consistent with its commitments under the Kigali Amendment, from 1 January 2024 to 1 January 2045. The NOU will issue annual HFC import quotas in metric tonnes in accordance with the Montreal Protocol control targets. The regulation also differentiates between higher- and lower-GWP HFCs, including HFC blends. Based on the country's consumption reduction plan, the quotas for high-GWP HFCs will be reduced year by year, thus resulting in higher supply of lower-GWP HFCs.

HFC consumption

31. Trinidad and Tobago only imports HFCs for use in the refrigeration and air-conditioning (RAC) servicing sector. In 2022, Trinidad and Tobago consumed R-404A (37.9 per cent of total HFC consumption in CO₂-eq tonnes), HFC-134a (26.1 per cent), R-410A (25.2 per cent), R-507A (6.3 per cent), R-407C (3 per cent), and other HFCs. Table 2 presents the country's HFC consumption as reported to the Ozone Secretariat under Article 7 of the Montreal Protocol.

Table 2. HFC consumption in Trinidad and Tobago (2019–2022 Article 7 data)

HFC	GWP	2019	2020	2021	2022	Share of HFC consumption in 2022 (%)
Mt						
HFC-32	675	2.59	1.50	4.19	2.37	0.1
HFC-125	3,500	0.0	0.14	0.0	0.0	0.0
HFC-134a	1,430	344.49	543.07	893.88	840.16	41.2
HFC-143a	4,470	0.0	0.92	0.0	0.0	0.0
HFC-152a	124	1.53	2.07	3.54	1.06	0.1
HFC-227ea	3,220	64.31	59.94	0.0	8.52	0.4
HFC-365mfc	794	0.0	0.0	0.0	27.61	1.4
R-404A	3,922	123.54	306.68	516.08	444.30	21.8

HFC	GWP	2019	2020	2021	2022	Share of HFC consumption in 2022 (%)
R-407A	2,107	1.13	22.94	22.60	0.0	0.0
R-407C	1,774	93.54	134.03	244.38	78.40	3.8
R-407F	1,825	2.57	0.51	0.24	1.45	0.1
R-408A	2,301	0.0	2.0	0.0	0.0	0.0
R-410A	2,088	564.71	833.60	482.49	554.29	27.2
R-417A	2,346	3.54	2.27	4.52	2.26	0.1
R-438A	2,264	0.23	2.16	0.0	1.60	0.1
R-448A	1,386	0.03	0.0	0.0	0.01	0.0
R-449A	1,396	0.0	0.0	0.0	4.50	0.2
R-507A	3,985	52.50	5.67	99.55	72.40	3.6
R-507C	3,985	0.0	45.83	0.0	0.0	0.0
Others	-	0.0	2.59	0.0	0.0	0.0
Total (mt)		1,254.71	1,965.92	2,271.47	2,038.93	100
CO₂-eq tonnes						
HFC-32	675	1,748	1,013	2,828	1,600	0.0
HFC-125	3,500	0	490	0	0	0.0
HFC-134a	1,430	492,621	776,590	1,278,248	1,201,429	26.1
HFC-143a	4,470	0	4,112	0	0	0.0
HFC-152a	124	190	257	439	131	0.0
HFC-227ea	3,220	207,078	193,007	0	27,434	0.6
HFC-365mfc	794	0	0	0	21,922	0.5
R-404A	3,922	484,474	1,202,676	2,023,859	1,742,367	37.9
R-407A	2,107	2,381	48,335	47,618	0	0.0
R-407C	1,774	165,926	237,749	433,493	139,070	3.0
R-407F	1,825	4,689	930	438	2,646	0.1
R-408A	2,301	0	4,602	0	0	0.0
R-410A	2,088	1,178,832	1,740,140	1,007,198	1,157,080	25.2
R-417A	2,346	8,305	5,325	10,604	5,302	0.1
R-438A	2,264	521	4,891	0	3,623	0.1
R-448A	1,386	42	0	0	14	0.0
R-449A	1,396	0	0	0	6,282	0.1
R-507A	3,985	209,213	22,595	396,707	288,514	6.3
R-507C	3,985	0	182,633	0	0	0.0
Others	-	0	0	0	0	0.0
Total (CO₂-eq tonnes)		2,756,019	4,425,345	5,201,433	4,597,414	100

32. The overall growth in HFC consumption was mainly due to the reduction in consumption of HCFCs and the wide availability of HFC-based technologies that substituted HCFCs. It is also due to the combination of increase in income levels and higher temperatures experienced in the country, which resulted in an increase in RAC systems including vehicles with mobile air-conditioning (MAC).

Country programme implementation report

33. The sectoral HFC consumption data provided by the Government of Trinidad and Tobago in its country programme implementation report for 2022 is consistent with the data reported under Article 7 of the Montreal Protocol.

HFC distribution by sector

34. HFCs are mainly consumed for servicing in centralized refrigeration systems (34.4 per cent in mt and 38.7 per cent in CO₂-eq tonnes), followed by commercial refrigeration (21.5 per cent in mt and 16.7 per cent in CO₂-eq tonnes), residential air-conditioning (16.8 per cent in mt and 15.9 per cent in

CO₂-eq tonnes), commercial air-conditioning (13.2 per cent in mt and 9.6 per cent in CO₂-eq tonnes) and other subsectors, as shown in table 3.

Table 3. HFC consumption in the refrigeration and air-conditioning servicing subsectors (2022)*

Sector	HFC-134a	R-410A	R-407C	R-507A	R-404A	Total	Share of total (%)
mt							
Refrigeration subsectors							
Domestic	9.36	0.0	0.0	0.0	0.0	9.36	0.5
Commercial	272.13	0.0	113.66	32.67	0.0	418.46	21.5
Industrial	0.0	0.0	0.0	0.0	165.50	165.50	8.5
Centralized systems	324.54	79.62	0.0	50.82	212.90	667.88	34.4
Reefer container	17.75	0.0	0.0	0.0	0.0	17.75	0.9
<i>Subtotal Refrigeration</i>	<i>623.78</i>	<i>79.62</i>	<i>113.66</i>	<i>83.49</i>	<i>378.40</i>	<i>1278.95</i>	<i>65.8</i>
Air-conditioning subsectors							
Residential	0.0	327.31	0.0	0.0	0.0	327.31	16.8
Commercial	185.08	70.73	0.0	0.0	0.0	255.81	13.2
Industrial	3.96	21.22	0.0	0.0	0.0	25.18	1.3
MAC	44.39	2.75	9.82	0.0	0.0	56.96	2.9
<i>Subtotal Air-conditioning</i>	<i>233.43</i>	<i>422.01</i>	<i>9.82</i>	<i>0.0</i>	<i>0.0</i>	<i>665.26</i>	<i>34.2</i>
Total	857.21	501.63	123.48	83.49	378.40	1,944.21	100
CO₂-eq tonnes							
Refrigeration subsectors							
Domestic	13,384	0	0	0	0	13,384	0.3
Commercial	389,148	0	201,614	130,172	0	720,933	16.7
Industrial	0	0	0	0	649,025	649,025	15.1
Centralized systems	464,092	166,207	0	202,518	834,909	1,667,725	38.7
Reefer container	25,388	0	0	0	0	25,388	0.6
<i>Subtotal Refrigeration</i>	<i>892,012</i>	<i>166,207</i>	<i>201,614</i>	<i>332,690</i>	<i>1,483,933</i>	<i>3,076,455</i>	<i>71.4</i>
Air-conditioning subsectors							
Residential	0	683,265	0	0	0	683,265	15.9
Commercial	264,665	147,642	0	0	0	412,307	9.6
Industrial	5,663	44,292	0	0	0	49,954	1.2
MAC	63,476	5,743	17,424	0	0	86,643	2.0
<i>Subtotal Air-conditioning</i>	<i>333,804</i>	<i>880,942</i>	<i>17,424</i>	<i>0</i>	<i>0</i>	<i>1,232,169</i>	<i>28.7</i>
Total	1,225,816	1,047,148	219,038	332,690	1,483,933	4,308,624	100

*Data in this table is based on best estimates on servicing consumption, and thus is different from Article 7 data.

Refrigeration and air-conditioning servicing sector

35. There are 1,008 service workshops consuming HFCs. The exact number of technicians servicing RAC equipment is not available; however, based on inputs available from a field survey, it is estimated at over 2,000, in both formal and informal set-ups. Currently, low-GWP refrigerants are used in the refrigeration sector (e.g., R-600a in domestic refrigerators and R-290 in commercial refrigeration), and use of such refrigerants in air-conditioning applications (e.g., R-290) is low.

Domestic, industrial and transport refrigeration

36. Both HFCs and low-GWP alternatives are used in domestic, industrial and transport refrigeration servicing applications. The use of R-600a is prevalent in domestic refrigeration equipment; with time and with retirement of HFC-based domestic refrigerators, the demand for HFCs in this application is expected

to decrease. In the industrial and transport refrigeration servicing applications, the market penetration of low-GWP alternatives is low; these applications are dependent on high-GWP refrigerants such as HFC-134a and R-404A.

Centralized refrigeration systems

37. The centralized systems comprise cold rooms and storage, and logistic centres for refrigerated products. These equipment use HFC-134a, R-404A, R-410A, and R-507A. This sector experiences high levels of service demand and has the highest consumption both in metric tonnes and in GWP terms.

Commercial refrigeration equipment

38. The commercial refrigeration sector, both in self-contained systems and in refrigeration chambers, is one of the largest consumers of HFCs, as these equipment are widespread and experience high leakage rates due to the nature of use. This sector involves storage, distribution, and sales of refrigerated goods, and the main HFCs consumed are HFC-134a, R-407C and R-507A.

Residential and commercial air-conditioning

39. Residential and commercial air-conditioning systems are used extensively. Due to the tropical weather conditions, the population of equipment in households and commercial establishments is experiencing high growth and servicing demand for these equipment is high. These applications mainly consume HFC-134a and R-410A.

Mobile air-conditioning

40. HFC-134a is the main refrigerant consumed in this sector. The service technicians are distributed across the country. The use of HFC-free alternatives (e.g., HFO-1234yf) is limited. Since most of the vehicles used in the country are old, the use of HFC-134a is expected to continue in the future.

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

Overarching strategy

41. The Government of Trinidad and Tobago is proposing two stages for the KIP. Stage I is to be implemented simultaneously with the HPMP until 2029. Stage II is expected to cover a period of 15 years (from 2030 to 2045).

Established HFC baseline and proposed reductions

42. The Government of Trinidad and Tobago reported its Article 7 data for 2020-2022. By adding 65 per cent of the HCFC baseline in CO₂-eq tonnes to the average HFC consumption in 2020-2022, the established HFC baseline is 5,681,787 CO₂-eq tonnes, as shown in table 4.

Table 4. HFC baseline for Trinidad and Tobago (CO₂-eq tonnes)

Baseline calculation components	2020	2021	2022
HFC annual consumption	4,425,345	5,201,433	4,597,414
HFC average consumption in 2020-2022	4,741,397		
HCFC baseline (65%)	940,390		
HFC baseline	5,681,787		

43. The consumption of HFCs in different applications is expected to increase due to reasons explained in paragraph 32 above. If no actions are taken, projections estimated at a conservative growth rate of 2 per cent from 2023 to 2030 would result in the country exceeding the Montreal Protocol consumption limits in 2029 and 2030, as shown in table 5.

Table 5. Unconstrained scenario of HFC consumption forecast at 2 per cent growth rate (CO₂-eq tonnes)

	2023	2024	2025	2026	2027	2028	2029	2030
Montreal Protocol consumption limits	n/a	5,681,787	5,681,787	5,681,787	5,681,787	5,681,787	5,113,608	5,113,608
HFC consumption growing at an annual rate of 2%	4,597,414*	4,689,362	4,783,150	4,878,813	4,976,389	5,075,917	5,177,435	5,280,984
Required HFC reductions	n/a	0	0	0	0	0	-63,827	-167,376
Estimated reductions from baseline by 2030								400,803

* Assuming same levels of consumption as 2022.

44. It is, therefore, necessary that activities to reduce demand for HFCs are implemented in the country as soon as possible to curtail consumption growth of HFCs. In light of this, the Government is proposing to achieve a consumption level that is 10 per cent below the HFC baseline by 2029, which would result in a reduction of 568,179 CO₂-eq tonnes of HFCs compared to the baseline level.

Proposed activities

45. The Government of Trinidad and Tobago proposes to follow a strategy for controlling HFC consumption growth in stage I of the KIP through a combination of policies and regulations for controlling and monitoring HFC imports and consumption in line with the Kigali Amendment targets; service sector activities targeting high HFC consuming sectors; activities to promote the adoption of low-GWP technologies in commercial refrigeration and industrial RAC applications; and awareness and outreach activities on the implementation of HFC phase-down and the adoption of low-GWP alternatives. The Government recognises that the country could experience high growth in HFC consumption and proposes to implement activities to minimise growth in population of HFC-based equipment during stage I of the KIP.

46. The different elements of the KIP for Trinidad and Tobago with their cost breakdown are presented below:

- (a) *Strengthening of institutions related to monitoring, verification and ensuring compliance with the Kigali Amendment:* Stakeholder sessions to inform the RAC sector of the review and update of the policy and regulatory measures; consultancy to support the strengthening of national capacities to formulate, adapt or update the policy and regulatory framework including codes and standards for HFC control; three training courses for customs and stakeholders on regulations to control and monitor HFCs and steps to prevent illegal trade; three training courses for brokers and importers and other authorities on data reporting of HFCs and monitoring of HFC imports and sales; four training courses for border control officers and other relevant actors/authorities on, *inter alia*, revision of the policy and legal framework, illegal trade, new alternatives, revised standards, and imports; update of the application used by border control officers to include HFCs and development of a border control handbook that includes HFCs; development of a fire extinguishers inventory; development of a good practice booklet for the maintenance of HFC-based portable fire extinguishers, and printing and distribution of 500 copies of the booklet; three awareness raising workshops on best practices in the fire extinguisher sector and the impact of controls and restrictions on the import and use of HFCs in the sector (US \$102,500);

- (b) *Creation and strengthening of capacities to implement new alternatives in a sustainable and safe manner:* Procurement of RAC equipment to training centres for use during training on good service practices and safe handling of low-GWP refrigerants and updating training programme for service technicians (US \$167,580); update of the training materials for the Professional Certification Scheme for RAC technicians and awareness raising workshops for promoting the certification; 15 training courses with the updated curricula for 300 RAC technicians and partial financial support to 100 technicians with the best performance in the training courses to obtain the professional certification; provision of tools to about 65 RAC technicians and servicing sector companies for the adoption of good practices in the safe handling of commercial refrigeration equipment or systems that operate with HC; update of the electronic registry system for certified technicians (US \$220,752); development and printing of training material for good service practices in the MAC sector; 15 training sessions for 300 technicians on good practices in the MAC sector; purchase and delivery of 80 recovery and recycling equipment for the MAC sector (US \$327,000) (Total: US \$715,332);
- (c) *Reduction of the installed capacity of HFCs:* A comparative feasibility study to assess the efficiency, costs, complexity, and environmental impact of the different alternatives to HFCs for large-sized commercial refrigeration equipment; two diagnostic workshops and two dissemination workshops on the findings of the feasibility study; coordination and promotion of a project for the early retirement of inefficient RAC systems; two training courses for 15 to 20 scraping centres personnel and service technicians on end-user management of HFC-based equipment; public awareness campaign to promote the equipment retirement project; provision of four tool kits (e.g., recovery machines, recovery cylinders, tools and accessories for recovering refrigerants) to two scraping centres (US \$143,800);
- (d) *Awareness raising of HFC-free technology:* Design of a communication campaign targeting different audiences on topics relating to alternative refrigerants and technologies, and the importance of energy efficiency while using HFCs; comprehensive media campaign targeting different audiences including social media, printed materials, and other public media; four awareness raising workshops on the KIP for end users and stakeholders to assess the media campaign; development of a product registry of medium and large RAC equipment; four workshops for the promotion of more efficient lower-GWP alternative technologies in, *inter alia*, the air-conditioning and commercial refrigeration sector (US \$84,000); and
- (e) *Gender mainstreaming:* Diagnostic assessment, design, implementation and monitoring of the action plan to promote gender mainstreaming; three awareness raising and training workshops for institutions on gender mainstreaming; design and publication of awareness materials to promote gender mainstreaming while implementing KIP activities (US \$25,000).

Project implementation, coordination and monitoring

47. The NOU, with support from UNDP, will monitor and follow up on policies and project implementation to ensure compliance with the targets, prepare annual progress reports and tranche implementation and verification reports, and organize meetings with stakeholders. The total cost of US \$107,063 includes the following cost breakdown: consultant (US \$90,000); monitoring travels (US \$5,063); verification reports (US \$12,000).

Gender policy implementation

48. In line with decisions 84/92(d), 90/48(c) and 92/40(b), the Government of Trinidad and Tobago will promote the participation of women in programmes or activities under the KIP that require the contracting of consultancy, supervision, and training services. The participation of women in activities involving workshops and training for the service sector will also be promoted, and capacity building of NOU staff on gender mainstreaming policies and good practices that can be followed to maximise participation of women in different activities will be undertaken.

Total cost of stage I of the Kigali HFC implementation plan

49. The budget for stage I has been established at US \$1,177,695. The cost of activities in the refrigeration servicing sector has been established in line with decision 92/37.

Coordination of activities in the servicing sector under HCFC phase-out and HFC phase-down plans

50. Stage I of the KIP will be implemented in three tranches. The schedule of HFC phase-down and HCFC phase-out commitments, and the activities and associated costs of stage I of the KIP and stage II of the HPMP are presented in annexes I and II, respectively, to the present document.

Implementation of the first tranche of stage I of the Kigali HFC implementation plan

51. The first funding tranche of stage I of the KIP, in the total amount of US \$545,107, will be implemented between January 2024 and December 2026 and will include the following activities:

- (a) *Strengthening of institutions related to monitoring, verification and ensuring compliance with the Kigali Amendment:* Review and update of legal measures; regulatory impact assessment of the proposed measures; at least one training session with institutions and associations on legal measures to control and reduce HFC emissions and consumption; one training course for customs, stakeholders and authorities on the control on the import and trade of HFCs and HFC-based equipment; one training course for brokers, importers and other authorities on data reporting of HFCs and monitoring of HFC imports and sales; update of the policy and legal framework, strengthening of the licensing and quota system, and update and implementation of the Customs Registry System and Harmonized Customs codes, including the update of the application used by border control officers, and development of a border control handbook, to include HFCs; development of a good practice booklet for the maintenance of HFC-based portable fire extinguishers and edition and printing of 500 copies of the booklet; one awareness raising workshop on best practices in the fire extinguisher sector and the impact of HFC import controls and restrictions on the sector (US \$46,250);
- (b) *Creation and strengthening of capacities to implement new alternatives in a sustainable and safe manner:* Procurement and delivery of basic training modules for natural refrigerant management at four training centres; five training courses with the updated curricula for at least 100 technicians; update of the labour competence certification standard; financial support to at least 37 technicians to obtain the certification; provision to 25 RAC technicians of the minimum tools required for the installation and servicing of HC-based equipment and systems; update of the electronic registry system for certified technicians; identification of 60 service and maintenance MAC system workshops with high volume of refrigerant consumption; nine training sessions for 135 technicians on good practices in the MAC sector; procurement and distribution of 52 recovery and recycling equipment for the MAC sector (US \$358,559);

- (c) *Reduction of the installed capacity of HFCs*: Initial diagnosis of the conditions of the commercial refrigeration sector and design of the comparative feasibility study to assess the different alternatives to HFCs; one diagnostic workshop with the different sub-sectors in the commercial refrigeration on the findings of the feasibility study; preparation of the retirement project of inefficient RAC systems; one training course for scraping centre personnel and service technicians on end user management of HFC-based equipment; public awareness campaign to promote the equipment retirement project; provision of two tool kits to one scraping centre (US \$49,900);
- (d) *Awareness raising of HFC-free technology*: Design of a communication campaign addressing topics relating to alternative refrigerants and technologies, and the importance of energy efficiency while using HFCs; comprehensive media campaign including social media, printed materials, and other public media; one awareness raising workshop on the KIP for end-users and stakeholders to assess the media campaign; development of a product registry of medium and large HFC end-users in the RAC sector; two workshops for the promotion of more efficient lower-GWP alternative technologies (US \$37,200);
- (e) *Gender mainstreaming*: Diagnostic assessment, design, implementation and monitoring of the action plan to promote gender mainstreaming; one awareness raising and training workshop for institutions on gender mainstreaming; design and publication of dissemination material to promote gender mainstreaming (US \$12,500); and
- (f) Project coordination and monitoring (US \$40,699) with the following cost breakdown: consultants (US \$30,000); travel (US \$3,699); workshops and meetings (US \$4,500); and office expenses (US \$2,500).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

52. The Secretariat reviewed stage I of the KIP for Trinidad and Tobago in light of the existing policies and guidelines of the Multilateral Fund, including decision 92/37,⁹ stage II of the HPMP, and the 2023-2025 business plan of the Multilateral Fund.

Overarching strategy

53. The Kigali Amendment allows for growth in HFC consumption up to a baseline level. However, to avoid such a growth, the Government of Trinidad and Tobago is requesting funds for stage I of the KIP to sustainably reduce HFC growth to reach consumption levels of 10 per cent below the HFC baseline by 2029; further, when future tranches of stage II of the HPMP are submitted, the Government would take other actions to minimise substitution of HCFCs with high-GWP HFCs during HPMP implementation.

54. In line with decision 87/50(g)(iii), the proposal includes the following early actions to limit the growth of HFCs: adoption of better servicing practices including recovery and reuse of HFCs, that would help reduce HFC emissions during servicing, maintenance and end-of-life disposal of equipment; training on safe use of alternative non-HFC refrigerants; control and monitoring of HFC consumption level; awareness raising and promotion of activities for the adoption of low-/lower-GWP refrigerant-based alternatives; and policies to avoid establishing any new manufacturing capacities of equipment and products using HFCs and to actively promote reduction and cessation of the use of HFC-based domestic refrigerators and self-contained commercial refrigeration equipment. UNDP explained that specific dates for the adoption of regulations for prohibiting import and sale of HFC-based equipment would be decided upon

⁹ Decision on the level and modalities of funding for HFC phase-down in the refrigeration servicing sector.

after stakeholder consultations and keeping in view the market factors and technology trends relating to alternatives in order to achieve sustainable reductions in HFC consumption. It was also agreed that UNDP would continue to report on the status of implementation of regulations for the adoption of low-/lower-GWP refrigerant-based alternatives in different applications and the impact of existing activities on the reduction in imports of HFC-based equipment, when submitting future KIP tranche implementation reports.

Established HFC baseline and proposed reductions

55. The baseline for Trinidad and Tobago is 5,681,787 CO₂-eq tonnes based on the reported HFC consumption for 2020, 2021 and 2022. Based on the estimated values in table 5, the country's HFC consumption could increase from 4,597,414 CO₂-eq tonnes in 2022 to 5,113,608 CO₂-eq tonnes in 2030. Noting that the HFC consumption level is not expected to decrease during the period 2024 to 2028 and HPMP implementation includes many steps to reduce dependence on HFCs while adopting alternatives to HCFCs, the Secretariat requested additional information from UNDP on how stage I of the KIP would result in a reduction in HFC consumption in the long-term including specific steps that would be taken by the Government. UNDP explained that the Government would implement its HFC licensing and quota systems to maintain HFC consumption below the control limits specified in the Agreement; undertake training and capacity building of the service sector in good practices and safe adoption of alternative refrigerants; implement continued awareness and information outreach activities for different stakeholders on the adoption of low-GWP alternatives in different applications; and undertake consultancy with national stakeholders engaged in the import and sale of domestic refrigerators and self-contained commercial refrigeration equipment to implement regulations to reduce and prohibit imports of HFC-based equipment and in the case of other sectors, continue to promote the adoption of lower-/low-GWP technologies.

56. The Secretariat notes that under a conservative growth scenario of 2 per cent, the expected consumption in 2029 and 2030 would be higher than Montreal Protocol consumption limits, and consequently there would be a potential risk for non-compliance if no actions were taken. Any delays in approval of the KIP and implementation of KIP activities would result in slower reduction in consumption of HFCs and could result in the inability from the country to achieve its compliance targets by 2029 and 2030.

Starting point for sustained reductions in HFC consumption

57. As shown in table 4, the baseline for HFC consumption is 5,681,787 CO₂-eq tonnes. The methodology to calculate the starting point for sustained reductions in HFC consumption is still under discussion. The Secretariat notes that the starting point will be established once the Executive Committee decides on the methodology for determining the starting point.

Policy, regulatory and institutional frameworks

HFC licensing and quota system

58. 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 Trinidad and Tobago established a licensing system for HFCs and their blends as they are listed as toxic chemicals under the Pesticides and Toxic Chemicals Act 1979 and the Toxic Chemicals Regulations 2007 of Trinidad and Tobago. The Government would issue annual HFC import quotas in metric tonnes to authorised importers from the year 2024, which would ensure that the total quantity of HFCs imported is lower than the targets specified under the KIP; the quota system would involve allocation of a portion of the baseline to high-GWP HFCs, another portion to lower-/low-GWP HFCs and a third portion would be retained as a reserve with the Government. Because the institutional and

legislative capacity for the quota system is already in place, the Government of Trinidad and Tobago will be in a position to promptly issue import quotas for HFCs to each registered importer, starting in 2024.

Fluctuation in HFC consumption in the baseline years

59. The Secretariat requested additional information relating to the reasons for fluctuations in the consumption of different HFCs (e.g., significant growth in HFC-134a and R-404A during the period 2020 to 2022 and significantly lower levels of R-410A in 2021 and 2022 compared to 2020). UNDP explained that the consumption for the years 2020, 2021 and 2022 represents a more accurate record of actual imports of HFCs as the Government had undertaken activities to strengthen the HFC licensing system; compared to the year 2020, HFC imports in 2021 experienced growth in the case of HFC-134a, R-404A, and R-407C, due to a combination of perceived future shortage of these HFCs by the importers and the reduction in HCFC-based equipment that was substituted by HFC-based equipment; R-507A experienced growth as it is the refrigerant of choice over R-404A in commercial refrigeration and centralized refrigeration systems applications; consumption of some of the blends like R-407A, R-438A, R-448A, R-449A that are used as retrofit substitutes to existing equipment could fluctuate depending upon market demand and importers' commercial practices; HFC-32 demand is expected to grow based on the increase in future imports of HFC-32-based air-conditioning equipment; HFC-365mfc was imported in 2022 for a foam project and its use is expected to be discontinued in the future; HFC-227ea that is used in fire-fighting equipment was imported in 2019 and 2020 in excess and this quantity catered to the demand for 2021 and 2022; and HFC-152a is used in small quantities in aerosol applications. UNDP also explained that 2022 consumption would largely represent the realistic use of HFCs in different applications.

Technical and cost-related issues

Regulations to control import of HFC-based equipment

60. The Secretariat had detailed discussions with UNDP on the control of imports of HFC-based equipment. UNDP explained that the Government would not be in a position to provide specific timelines for prohibiting imports of HFC-based equipment in different applications due to market demand for such equipment including as substitutes to HCFC-based equipment, and also due to non-availability of equipment based on low-GWP technologies. The Government, during stage I of the KIP, would have periodic consultations with the national stakeholders on the possibility of reducing and prohibiting imports of HFC-based domestic refrigerators and self-contained commercial refrigeration equipment, and would undertake other awareness and capacity building activities to promote the adoption of low-GWP technologies in other applications such as residential and commercial air-conditioners.

Activities for capacity building and monitoring the use of HFC-227ea in fire extinguishers

61. The Secretariat requested clarification on the activities proposed to cover capacity building and monitor the use of HFC-227ea in the fire-extinguisher sector. UNDP explained that there is limited awareness in this sector on the use of HFC-227ea and its high GWP; through the proposed activities, the users would have better awareness of its use and the good maintenance practices of HFC-based portable fire extinguishers and they would be more engaged in potential future activities implemented under the KIP aimed at reducing consumption in this sector.

National product registry of RAC equipment

62. Regarding the national product registry of RAC equipment, UNDP explained that this component would help in developing an inventory of medium and large capacity commercial and industrial RAC equipment that use HFCs and their alternatives. This inventory would be useful for future activities relating to the adoption of low-GWP alternatives as substitutes for both existing and new equipment. The feasibility

study to assess environment friendly technologies in commercial refrigeration equipment as well as the awareness and information outreach activities would also support in populating this product registry.

Comparative feasibility study to assess alternative technology options for commercial refrigeration equipment

63. The Secretariat requested clarifications on the need for the comparative feasibility study to assess alternative technology options for commercial refrigeration equipment. UNDP explained that this study will help in understanding the technical and operational needs of different types of users of commercial refrigeration equipment and suitability of different alternative low-GWP technologies in those applications. Inputs from this report would also be useful to strengthen the national registry planned under stage I of the KIP and to implement targeted awareness and outreach activities that relate to commercial refrigeration applications; this will also assist the Government in implementing future policy measures and other activities such as engagement with financial institutions and demonstration projects in different applications to promote the adoption of low-GWP technologies and reduce dependence on HFCs in commercial refrigeration applications which have a large consumption of HFC-134a and R-404A.

Project for the early retirement of inefficient RAC applications

64. The Secretariat requested clarifications on this project noting that there is no detailed plan of action and/or policies for the early retirement of inefficient RAC applications and that decision 91/66 allows countries to develop an inventory of banks of used or unwanted controlled substances and a detailed plan for the collection, transport, and disposal of such substances. Following additional consultations with the Government on this matter, UNDP informed that they would reallocate funding under this activity to service sector activities that would be catalysing reduction in HFC consumption in the country.

Project for good practices in servicing mobile air-conditioning equipment

65. On the project on good practices in servicing MAC equipment, UNDP explained that the MAC sector would continue to use HFC-134a in the next few years and the extent of use of alternative refrigerants in this sector is low; there have been no specific support provided for this sector for adopting good service practices including recovery of HFC-134a; through the proposed activities, the sector would be engaged in implementing good service practices, and training and recovery and recycling equipment support would be provided for an initial set of MAC service workshops.

Total project cost

66. In accordance with decision 92/37(b)(ii), the total cost of stage I of the KIP has been agreed as submitted in the amount of US \$1,177,695; this includes total funding for KIP activities in the amount of US \$1,070,632 and project management and monitoring in the amount of US \$107,063. This will result in achieving HFC consumption reduction of 209.93 mt, which is equivalent to 477,108 CO₂-eq tonnes at the average GWP of HFCs in the baseline years, that would be reduced from the remaining consumption eligible for funding in line with the Executive Committee's policies and guidelines.

67. Based on the revision in the activities proposed to be implemented and the reallocation of funds mentioned in paragraph 64, a total of 24 (instead of 15) training courses with the updated curricula will be provided to 480 (instead of 300) RAC technicians, and tools will be provided to 70 (instead of 65) RAC technicians and servicing sector companies for the adoption of good practices in the safe handling of commercial refrigeration HC-based equipment. Furthermore, activities to promote refrigerant containment during servicing and to support the replacement of old HFC-based appliances to avoid emissions will also be conducted. The revised funding distribution for stage I of the KIP is given in the table below.

Table 6. Agreed cost of activities to be implemented in stage I of the KIP for Trinidad and Tobago (US \$)

Particulars	Original	Revised
Policies and regulations for HFCs	102,500	102,500
Service sector support	715,332	749,132
HFC demand reduction	143,800	110,000
Awareness and outreach	84,000	84,000
Gender mainstreaming support	25,000	25,000
Project coordination and monitoring	107,063	107,063
Total	1,177,695	1,177,695

Implementation plan for the first tranche of the Kigali HFC implementation plan

68. The first tranche will be implemented between January 2024 and December 2026 and the funding has been revised to US \$543,249, with the following cost breakdown and revision of activities:

- (a) *Strengthening of institutions related to monitoring, verification and ensuring compliance with the Kigali amendment:* to include additional training and capacity building for enforcement officers and data reporting system (US \$46,250);
- (b) *Creation and strengthening of capacities to implement new alternatives in a sustainable and safe manner:* to include training of additional RAC and MAC service technicians and procurement of additional equipment for technical institutions training technicians on good service practices (US \$368,023);
- (c) *Reduction of the installed capacity of HFCs* (US \$33,000);
- (d) *Awareness raising of HFC-free technology* (US \$37,200);
- (e) *Gender mainstreaming* (US \$12,500); and
- (f) *Project coordination and monitoring* (US \$46,276) with the following cost breakdown: consultants (US \$30,000); travel (US \$1,500); workshops and meetings (US \$10,000); and office expenses (US \$4,776).

Impact on the climate

69. The activities planned by Trinidad and Tobago, 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 Trinidad and Tobago will achieve an annual emission reduction of 568,179 CO₂-eq tonnes of HFCs when the final target in stage I of the KIP is achieved, based on the HFC reduction schedule.

Sustainability of the HFC phase-down and assessment of risks

70. 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 consultations with importers and other stakeholders on promoting the adoption of low-GWP alternatives to HFCs in different applications; implementation of regulations to reduce import of HFC-based equipment after consultations with the national stakeholders; and the continuous monitoring of all implemented activities.

71. UNDP provided information on the assessment of project implementation risks conducted for stage I of the KIP, indicating that a coordinated roadmap of activities by UNDP, the NOU and industry stakeholders would help ensure sufficient and timely funding and implementation.

72. Given that the current HFC consumption is 80.9 per cent of the total HFC baseline, if early actions are adopted, the potential risk of non-compliance is expected to be low and will be further mitigated by the implementation of a robust licensing and quota system for HFCs to control supply, as well as activities implemented under the KIP aimed at reducing demand for HFCs.

73. Although specific regulations to prohibit the use of HFCs and/or HFC-based equipment are yet to be implemented in Trinidad and Tobago, UNDP mentioned that the Government would work closely with different stakeholders to minimize any growth in consumption of high-GWP HFCs and actively examine possibilities of reducing import of high-GWP HFC-based equipment. Furthermore, stage I includes project activities such as training and capacity building for adopting good service practices and safe use of low-GWP alternatives, awareness and information outreach programmes on low-/lower-GWP alternatives and end-user incentive programmes for the accelerated adoption of low-GWP alternatives. The Government is already taking a range of initiatives to reduce dependence on high-GWP HFC-based equipment in different RAC applications.

74. The risk of technologies promoted through the KIP not being accessible to the country will be mitigated by engaging importers and distributors in the awareness and outreach activities on low-/lower-GWP alternatives, and by facilitating their access to alternative technologies.

75. The risk of delays in activities requiring regional coordination (e.g., regional regulations) will be mitigated by the implementing agencies facilitating dialogue among the NOUs of the region including through UNEP's Compliance Assistance Programme network meetings.

Co-financing

76. UNDP explained that co-financing under stage I of the KIP would include counterpart funding for programmes relating to demand-side management for the adoption of low-GWP technologies and in-kind time and resource support from the beneficiaries.

2023-2025 business plan of the Multilateral Fund

77. UNDP is requesting US \$1,177,695, plus agency support costs, for the implementation of stage I of the KIP for Trinidad and Tobago. The total value of US \$581,277, including agency support costs, requested for the period of 2023–2025, is US \$126,320 below the amount in the business plan.

Draft Agreement

78. A draft Agreement between the Government of Trinidad and Tobago and the Executive Committee for stage I of the KIP has not been prepared as the Agreement template is still under consideration by the Executive Committee.

79. If the Executive Committee so wishes, the funds for stage I of the KIP for Trinidad and Tobago could be approved in principle, and funds for the first tranche could be approved on the understanding that the Agreement would be prepared and presented at a future meeting, before the submission of the second tranche, and once the Agreement template has been approved.

RECOMMENDATION

80. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage I of the Kigali HFC implementation plan (KIP) for Trinidad and Tobago for the period 2023-2029 to reduce HFC consumption by 10 per cent of the country's baseline by 2029, in the amount of US \$1,177,695 plus agency support costs of US \$82,439, for UNDP, as reflected in the schedule contained in annex I of the present document;
- (b) Noting:
 - (i) That the Government of Trinidad and Tobago will establish its starting point for sustained aggregate reductions in HFC consumption based on guidance provided by the Executive Committee;
 - (ii) That, once the cost guidelines for HFC phase-down are agreed by the Executive Committee, the reductions from the country's remaining HFC consumption eligibility for funding will be determined in line with these guidelines;
 - (iii) That the reductions from the country's remaining HFC consumption eligible for funding referred to in subparagraph (b)(ii) above will be deducted from the starting point referred to in subparagraph (b)(i);
- (c) Approving the first tranche of stage I of the KIP for Trinidad and Tobago, and the corresponding tranche implementation plan, in the amount of US \$543,249, plus agency support costs of US \$38,028, for UNDP; and
- (d) Requesting the Government of Trinidad and Tobago, UNDP and the Secretariat to finalize the draft Agreement between the Government of Trinidad and Tobago and the Executive Committee for the reduction in consumption of HFCs, including the information contained in the annex referred to in subparagraph (a) above, and to submit it to a future meeting once the KIP Agreement template has been approved by the Executive Committee.

Annex I

**SCHEDULE OF HFC PHASE-DOWN AND HCFC PHASE-OUT COMMITMENTS AND FUNDING TRANCHES
UNDER THE KIGALI HFC IMPLEMENTATION PLAN AND THE HCFC PHASE-OUT MANAGEMENT PLAN
FOR TRINIDAD AND TOBAGO**

Kigali HFC implementation plan (stage I)

Row	Particulars	2023	2024	2025	2026	2027	2028	2029	Total
1.1	Montreal Protocol reduction schedule of Annex F substances (CO ₂ -eq tonnes)	n/a	5,681,787	5,681,787	5,681,787	5,681,787	5,681,787	5,113,608	n/a
1.2	Maximum allowable total consumption of Annex F substances (CO ₂ -eq tonnes)	n/a	5,681,787	5,681,787	5,681,787	5,681,787	5,681,787	5,113,608	n/a
2.1	Lead IA (UNDP) agreed funding (US \$)	543,249	0	0	516,677	0	0	117,769	1,177,695
2.2	Support costs for Lead IA (US \$)	38,028	0	0	36,167	0	0	8,244	82,439
3.1	Total agreed funding (US \$)	543,249	0	0	516,677	0	0	117,769	1,177,695
3.2	Total support costs (US \$)	38,028	0	0	36,167	0	0	8,244	82,439
3.3	Total agreed costs (US \$)	581,277	0	0	552,844	0	0	126,013	1,260,134

HCFC phase-out management plan (stage II)

Row	Particulars	2020	2021-2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	29.90	29.90	29.90	29.90	15.00	15.00	15.00	15.00	15.00	0.00	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	28.50	28.50	28.50	28.50	15.00	15.00	15.00	1.15	1.15	0.00	n/a
2.1	Lead IA (UNDP) agreed funding (US \$)	498,756	0	665,008	0	0	332,504	0	0	166,252	0	1,662,520
2.2	Support costs for Lead IA (US \$)	34,913	0	46,551	0	0	23,275	0	0	11,638	0	116,376
3.1	Total agreed funding (US \$)	498,756	0	665,008	0	0	332,504	0	0	166,252	0	1,662,520
3.2	Total support costs (US \$)	34,913	0	46,551	0	0	23,275	0	0	11,638	0	116,376
3.3	Total agreed costs (US \$)	533,669	0	711,559	0	0	355,779	0	0	177,890	0	1,778,896

Annex II

**SIMULTANEOUS IMPLEMENTATION OF THE HCFC PHASE-OUT MANAGEMENT PLAN
AND THE KIGALI HFC IMPLEMENTATION PLAN IN TRINIDAD AND TOBAGO**

Category of activity	HPMP – stage II		KIP – stage I		Combined cost for HPMP+KIP (US \$)
	Activity	Cost (US\$)	Activity	Cost (US\$)	
Training of customs officers	Training for about 200 enforcement officers and importers/brokers	51,000	Training of customs officers on HFC monitoring and control and monitoring use of HFCs in firefighting	82,500	133,500
Regulations for banning equipment using controlled substances	Regulations development including consultations with national stakeholders	26,000	Regulations for strengthening HFC import controls/licensing and quota system implementation support	20,000	46,000
Provision of tools and equipment support and training on safe servicing of low-GWP technologies	Technical training to technicians in 50 training courses on safe servicing of equipment using low-GWP technologies	532,539			532,539
Training of refrigeration technicians			Training and technical support to HFC-based refrigeration applications and equipment support for safe and good servicing practices	167,580	167,580
Training of AC and commercial refrigeration technicians	Training on good service practices and support to training centres on recovery and reuse of equipment and certification support	546,401			546,401
Training of MAC technicians			Training and equipment support to MAC technicians	327,000	327,000
Technical support and monitoring for fire-fighting applications					
Installation of recovery and recycling equipment and implementation of the programme	Equipment support, training and outreach programmes	245,442			245,442
Certification of technicians			Technical support for certification of service technicians and online registry of trained/certified service technicians	254,552	254,552

Category of activity	HPMP – stage II		KIP – stage I		Combined cost for HPMP+KIP (US \$)
	Activity	Cost (US\$)	Activity	Cost (US\$)	
Technical assessment of HFC alternatives in commercial refrigeration applications			Technical feasibility assessment of low-GWP alternatives in commercial refrigeration, dissemination of information on alternatives adoption and strengthening registry of large RAC equipment	110,000	110,000
Awareness	Awareness and outreach activities on HPMP implementation and adoption of low-GWP technologies	110,000	Awareness on KIP implementation and adoption of low-GWP technologies in HFC using applications	84,000	194,000
Gender mainstreaming during implementation			Implementation support, capacity building and outreach on gender mainstreaming to support implementation of gender policy	25,000	25,000
Coordination and monitoring	Project management and monitoring – HPMP activities	151,138	Project management and monitoring – KIP activities	107,063	258,201
Total		1,662,520		1,177,695	2,840,215
Percentage of total (%)		58.5		41.5	100