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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-seventh Meeting
Montreal, 28 November - 2 December 2016

PROJECT PROPOSAL: THAILAND

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

Phase-out

- HCFC phase-out management plan (stage I, third tranche)

World Bank and
Government of Japan

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Thailand

| (I) PROJECT TITLE | AGENCY | MEETING APPROVED | CONTROL MEASURE |
|-------------------------------|--------------------------|------------------|-----------------|
| HCFC phase out plan (Stage I) | World Bank (lead), Japan | 68th | 15% by 2018 |

| (II) LATEST ARTICLE 7 DATA (Annex C Group I) | Year: 2015 | 773.5 (ODP tonnes) |
|--|------------|--------------------|
|--|------------|--------------------|

| (III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes) | | | | | | | | Year: 2015 | |
|---|---------|-------|---------------|---------------|-----------|---------|---------------|------------|--------------------------|
| Chemical | Aerosol | Foam | Fire fighting | Refrigeration | | Solvent | Process agent | Lab use | Total sector consumption |
| | | | | Manufacturing | Servicing | | | | |
| HCFC-22 | | | | 348.0 | 222.1 | | | | 570.1 |
| HCFC-123 | | | | 1.1 | 1.7 | | | | 2.9 |
| HCFC-141b | | 179.3 | | | | 20.6 | | | 199.9 |
| HCFC-225 | | | | | | 2.3 | | | 2.3 |
| HCFC-141b in imported pre-blended polyols | | 21.1 | | | | | | | 21.1 |

| (IV) CONSUMPTION DATA (ODP tonnes) | | | |
|---|--|--------|--|
| 2009 - 2010 baseline: | | 927.6 | Starting point for sustained aggregate reductions: |
| | | | 943.28 |
| CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes) | | | |
| Already approved: | | 234.72 | Remaining: |
| | | | 708.56 |

| (V) BUSINESS PLAN | | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|-------------------|----------------------------|-----------|-----------|-----------|---------|-----------|-----------|
| World Bank | ODS phase-out (ODP tonnes) | 9.7 | 29.6 | 9.7 | 7.3 | 23.2 | 79.4 |
| | Funding (US \$) | 1,070,000 | 3,277,990 | 1,070,000 | 806,384 | 2,577,181 | 8,801,555 |

| (VI) PROJECT DATA | | | 2012 | 2013 | 2014* | 2015 | 2016 | 2017 | 2018 | Total | |
|--|---------------|---------------|-----------|-----------|---------|-----------|-----------|---------|-----------|------------|---------|
| Montreal Protocol consumption limits | | | n/a | 927.6 | 927.6 | 834.84 | 834.84 | 834.84 | 834.84 | n/a | |
| Maximum allowable consumption (ODP tonnes) | | | n/a | 927.6 | 927.6 | 834.84 | 834.84 | 834.84 | 788.46 | n/a | |
| Agreed funding (US \$) | World Bank | Project costs | 4,817,166 | 9,706,154 | 618,803 | 3,063,542 | 1,000,000 | 753,630 | 2,408,580 | 22,367,875 | |
| | | Support costs | 337,202 | 679,431 | 43,316 | 214,448 | 70,000 | 52,754 | 168,601 | 1,565,752 | |
| | Japan | Project costs | 302,965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 302,965 |
| | | Support costs | 39,385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39,385 |
| Funds approved by ExCom (US \$) | Project costs | | 5,120,131 | 0 | 0 | 9,706,154 | 0 | 0 | 0 | 14,826,285 | |
| | Support costs | | 376,587 | 0 | 0 | 679,431 | 0 | 0 | 0 | 1,056,018 | |
| Total funds requested for approval at this meeting (US \$) | Project costs | | | | | | 618,803 | | | 618,803 | |
| | Support costs | | | | | | 43,316 | | | 43,316 | |

*The third tranche should have been submitted in 2014

| | |
|--------------------------------------|------------------------------|
| Secretariat's recommendation: | For individual consideration |
|--------------------------------------|------------------------------|

PROJECT DESCRIPTION

1. On behalf of the Government of Thailand, the World Bank as the lead implementing agency, has submitted to the 77th meeting a request for funding for the third tranche of stage I of the HCFC phase-out management plan (HPMP)¹, at the amount of US \$1,000,000, plus agency support costs of US \$70,000 for the World Bank only². The submission includes a progress report on the implementation of the second tranche, the verification report on 2015 HCFC consumption and the tranche implementation plan for 2017.

Report on HCFC consumption

HCFC consumption

2. The Government of Thailand reported a consumption of 773.5 ODP tonnes of HCFC in 2015. The 2011-2015 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Thailand (2011-2015 Article 7 data)

| HCFC | 2011 | 2012 | 2013 | 2014 | 2015 | Baseline |
|--------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Metric tonnes (mt) | | | | | | |
| HCFC-22 | 11,445.76 | 16,821.19 | 11,988.86 | 11,984.35 | 10,365.31 | 13,028.60 |
| HCFC-123 | 134.53 | 198.88 | 113.47 | 136.06 | 142.92 | 159.75 |
| HCFC-124 | 2.99 | 2.99 | 4.03 | 4.41 | 0.12 | 3.41 |
| HCFC-141b | 1,620.23 | 2,028.98 | 1,817.37 | 1,830.46 | 1,817.68 | 1,865.93 |
| HCFC-142b | 0 | 0 | 0 | 0 | 0 | 1.81 |
| HCFC-225* | 28.62 | 45.91 | 37.64 | 39.35 | 8.67 | 54.60 |
| Total HCFC (mt) | 13,232.13 | 19,097.95 | 13,961.37 | 13,994.63 | 12,334.70 | 15,114.10 |
| HCFC-141b in imported polyols | 160.53 | 182.23 | 53.86 | 92.29 | 192.03 | 142.50** |
| ODP tonnes | | | | | | |
| HCFC-22 | 629.52 | 925.17 | 659.39 | 659.14 | 570.09 | 716.57 |
| HCFC-123 | 2.69 | 3.98 | 2.27 | 2.72 | 2.86 | 3.19 |
| HCFC-124 | 0.07 | 0.07 | 0.09 | 0.10 | 0.00 | 0.08 |
| HCFC-141b | 178.23 | 223.19 | 199.91 | 201.35 | 199.94 | 205.25 |
| HCFC-142b | 0 | 0 | 0 | 0 | 0 | 0.12 |
| HCFC-225** | 0.84 | 2.24 | 1.66 | 1.04 | 0.61 | 2.30 |
| Total HCFC (ODP tonnes) | 811.35 | 1,154.65 | 863.32 | 864.35 | 773.50 | 927.51 |
| HCFC-141b in imported polyols | 17.66 | 20.05 | 5.92 | 10.15 | 21.12 | 15.67** |

*These figures include consumption for HCFC-225, HCFC-225ca and HCFC-225cb

**Average consumption 2007-2009

3. As reported at the 74th meeting, the large consumption of HCFC-22 and HCFC-141b in 2012 was due to provisions made by the manufacturing sector in preparation for the control measures. In 2013, HCFC-141b contained in imported pre-blended polyols was partially replaced by polyols blended in Thailand. In 2014, HCFC-141b in bulk and in pre-blended polyols increased due to provisions made before the control measure in 2015.³ In 2015, the consumption of HCFC-22 and HCFC-141b decreased mainly due to the implementation of HCFC phase-out projects in the air-conditioning and foam sectors, respectively and the implementation of a quota system to control and monitor the consumption of HCFCs.

¹ The second tranche due in 2013 was approved at the 74th meeting; therefore, the third tranche due in 2014 has only been submitted to the 77th meeting.

² As per the letter of 26 August 2016 from the the Department of Industrial Works (DIW) of Thailand to the World Bank.

³ Paragraph 3 of document UNEP/OzL.Pro/ExCom/74/48.

Verification report

4. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs for 2015 was 773.50 ODP tonnes. The verification concluded that Thailand has not exceeded the maximum allowable consumption level of 834.84 ODP tonnes for 2015.

Country programme (CP) implementation report

5. The Government of Thailand reported HCFC sector consumption data under the 2015 CP implementation report which is slightly higher than the data reported under Article 7 of the Montreal Protocol due to the difference in reported HCFC-225 consumption. The 2015 CP data was submitted in May 2016 and was based on the best estimates of consumption of HCFC-225 at that time.

Progress report on the implementation of the second tranche of the HPMP

Legal framework

6. The DIW established an import quota system for HCFCs in January 2013. The DIW is planning to issue regulations to prohibit manufacturing HCFC-22-based air-conditioners (ACs) with a capacity of less than 50,000 BTU⁴ per hour for sales in domestic markets and using HCFC-141b as a foam blowing agent except for spray foam applications from 1 January 2017. HCFC-141b in imported pre-blended polyols is also controlled through import permits issued by the DIW.

7. The risk assessment study for ACs using HFC-32 with a capacity range of 36,000 to 50,000 BTU per hour is proposed to be undertaken during the implementation of the third tranche.

Manufacturing sector

Room AC manufacturing

8. The refrigeration AC sector plan originally proposed in the HPMP was to convert twelve enterprises that were consuming 942.7 metric tonnes (mt) (51.85 ODP tonnes) of HCFC-22 to HFC-32 technology. The 74th meeting⁵ was informed that two enterprises, Better Living and Pan Tycoon, with a total consumption of 2.31 ODP tonnes of HCFC-22 would convert to HFC-410A with their own funds. In early 2016, Pan Tycoon, one of the two AC manufacturers informed the DIW and the Government Savings Bank (GSB) of its interest to participate in the phase-out programme. The World Bank has also confirmed that funds relating to Better Living amounting to US \$284,180 could be adjusted against total funding received in the third tranche and the enterprise would phase-out HCFC-22 consumption without assistance from the Fund.

9. Further, at the 74th meeting, it was noted that US \$97,017 available from previous balances under the project will be reprogrammed when the next tranche of the HPMP will be submitted⁶. The World Bank confirmed that this amount can also be deducted from the third tranche.

10. The 11 enterprises covered under the project will phase-out HCFC-22 consumption by June 2017. Better Living has already stopped production of HCFC-22-based ACs.

⁴ BTU: British thermal unit (equivalent to 0.293 Watt - hour).

⁵ Paragraph 8 of document UNEP/OzL.Pro/ExCom/74/48.

⁶ Paragraph 9 of document UNEP/OzL.Pro/ExCom/74/48.

Polyurethane (PU) foam manufacturing

11. At a total of US \$3,351,140, ten additional foam enterprises with a total consumption of 41.06 ODP tonnes of HCFC-141b, signed sub-grant agreements from December 2014 to July 2016. Two foam enterprises completed their conversions with the total phase-out of 94.41 mt (10.39 ODP tonnes) in early 2016, the remaining eight enterprises will be converted by December 2017. The cumulative disbursement to the foam sector is US \$1,662,996.

12. There are still 60 foam enterprises and one group project comprising 30 small-size enterprises for whom the agreement is yet to be signed. The funding requirement is estimated to be more than US \$3 million. GSB expects that by the end of 2016 relevant agreements will be signed and US \$3 million will be fully committed. According to the PU foam group of the Federation of Thai Industry, additional enterprises are expected to participate in this project given that the Government is planning to ban consumption of HCFC-141b from 1 January 2017.

Technical assistance (TA)

13. The following TA activities were carried out:

- (a) The DIW issued 2016 import quotas for five HCFCs amounting to 779.2 ODP tonnes in January 2016. In April 2016, a stakeholder workshop was held by the DIW on the status on the implementation of the HPMP. Lessons learned during implementation were presented by participating enterprises;
- (b) Two stakeholder workshops were organised for consultations relating to ban on use of HCFC-141b in the foam sector except for spray foam applications, and the use of HCFC-22 in the manufacturing of ACs with cooling capacity lower than 50,000 BTU per hour for the domestic market. It is expected that the final regulations would be enacted by 1 January 2017;
- (c) The DIW completed a risk assessment study for equipment with a capacity of less than 36,000 BTU per hour. As a result, the Department of Civil Works and Town Planning amended building code allowing installation of HFC-32 ACs with cooling capacity up to 36,000 BTU per hour in high-rise buildings;
- (d) The DIW informed stakeholders that it was working closely with the Customs Department and the Ministry of Commerce to ban imports of HCFC-22 ACs with cooling capacity lower than 50,000 BTU per hour. Consultations were held with the Thailand Industrial Standard Institute to revise the product standard to exclude the use of HCFC-22 as refrigerant in ACs with cooling capacity lower than 50,000 BTU per hour. These actions would ensure that these HCFC-22 ACs would not be available in the domestic market; and
- (e) Safety audit were completed in the three AC manufacturing enterprises covered under the project.

Project implementation and monitoring unit (PMU)

14. Since there are two executing agencies participating in the HPMP (GSB and DIW), two PMUs were established. The GSB PMU will be in charge of implementing sub-projects for which sub-grant agreements have already been signed; develop new sub-project proposals and new sub-grant agreements; and will participate in the training and workshops to get an update on the Executive Committee decisions as well as the development of new technologies.

15. The DIW PMU will continue to facilitate the approval of new sub-grant agreements by reviewing the sub-project eligibility, disposal plans for old and unusable equipment, and implementation of environmental management plan; as well as drafting policies and regulatory measures as required to support a sustainable phase-out of HCFCs; will conduct meetings of the project steering committee on a quarterly basis; and undertake other activities for facilitating and monitoring HCFC phase-out, ensure that the draft regulations on prohibition of production of HCFC-22 based air-conditioners and import of HCFC-141b in bulk and contained in pre-blended polyol are finalized, enacted and enforced by early 2017 onward, and that DIW officers are trained on the new regulations during the first half of the next calendar year.

Level of fund disbursement

16. As of September 2016, of the US \$14,826,285 so far approved, US \$3,521,609 had been disbursed (US \$3,428,085 for the World Bank and US \$93,524 for the Government of Japan). The balance of US \$11,304,676 will be disbursed in the next two years (Table 2).

Table 2. Financial report of stage I of the HPMP for Thailand (US \$)

| Agency | First tranche | | Second tranche | | Total approved | |
|------------------------------|------------------|------------------|------------------|------------------|-------------------|------------------|
| | Approved | Disbursed | Approved | Disbursed | Approved | Disbursed |
| World Bank | 4,817,166 | 1,367,088 | 9,706,154 | 2,060,997 | 14,523,320 | 3,428,085 |
| Japan | 302,965 | 93,524 | 0 | 0 | 302,965 | 93,524 |
| Total | 5,120,131 | 1,460,612 | 9,706,154 | 2,060,997 | 14,826,285 | 3,521,609 |
| Disbursement rate (%) | 29 | | 21 | | 24 | |

Implementation plan for the third tranche of the HPMP

17. The funds under the third tranche would be utilised for implementation of ongoing conversion projects in AC manufacturing enterprises and PU foam manufacturing enterprises except spray foam.

18. The projects that are currently under implementation would be largely completed by the end of 2017, with the disbursement schedule shown in Table 3.

Table 3. Expected disbursement for stage I of the HPMP for Thailand (US \$)

| Particulars | Approved up to second tranche | Disbursed as of end of Sept. 2016 | Estimated disbursement as of end of Dec. 2017 | Total |
|---------------------------------------|-------------------------------|-----------------------------------|---|-------------------|
| Room AC manufacturing sector | 5,956,369 | 1,502,805 | 6,608,009 | 8,110,814 |
| PU foam manufacturing sector | 5,923,007 | 1,662,996 | 2,738,602 | 4,401,598 |
| Technical assistance for compressors | 702,630 | 0 | 702,630 | 702,630 |
| Other Technical assistance activities | 863,138 | 93,524 | 404,938 | 498,462 |
| PMU | 1,381,141 | 262,283 | 704,516 | 966,799 |
| Total | 14,826,285 | 3,521,608 | 11,158,695 | 14,680,303 |

19. The above table showed that only US \$145,982 would be remaining from the funding so far approved that can be committed for ongoing projects. This necessitates programming of funding from the third and future tranches for continuing implementation of projects.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Report on HCFC consumption

20. The consumption during the period 2012 to 2015 is decreasing in Thailand. As explained in document UNEP/OzL.Pro/ExCom/74/48, the consumption of HCFC-22 decreased in the period 2013 to 2014 as a result of phase-out HCFC-22 by multinational enterprises and introduction of alternatives. The consumption of HCFC-141b is also experiencing a decreasing trend during this period because of phase-out of HCFC-141b in foam sector. The consumption is expected to decrease significantly in the years 2016 and 2017 with completion of project implementation in room AC manufacturing and PU foam sector and enforcement of regulations.

Verification report

21. The verification of HCFC consumption for the year 2015 was submitted and the consumption reported for the year 2015 is 773.5 ODP tonnes which is lower than the consumption target of 834.8 ODP tonnes for the year 2015. The Government of Thailand is, thus, in compliance with their 2015 HCFC consumption target.

22. There was a discrepancy in the consumption of HCFC-225 shown in the Article 7 report and 2015 CP report. The World Bank clarified that this discrepancy is because of non-availability of actual consumption data when the 2015 CP report was submitted and as a result, the best estimate of HCFC-225 was presented in the 2015 CP report.

Progress report on the implementation of the second tranche of the HPMP

Legal framework

23. The Government of Thailand has been implementing its HCFC import licensing and quota system since 2013. The Government has established a HCFC import quota of 779.20 ODP tonnes for 2016.

24. The World Bank indicated that the regulations for manufacturing controls on HCFC-22 based AC and foam manufacturing excluding spray foam manufacturing would be implemented by 1 January 2017. With regard to the change of the date for enforcing the ban on HCFC-141b imports (bulk and contained in pre-blended polyols) from 1 January 2016 as per decision 68/39(c) to 1 January 2017, the World Bank clarified that due to delays in administrative approval in 2014, the agreements relating to stage I of the HPMP could be signed by the Government only at the end of the year 2014. As original timeframe for implementation of the said controls was too close to signature of the project agreements, the Government decided to postpone the implementation of regulations by one year.

25. The Secretariat requested clarification on how the consumption for the spray foam sector will be monitored to avoid potential sales of HCFC-141b meant for spray foam to other PU foam manufacturing enterprises. The World Bank clarified that this would be done through a combination of monitoring consumption of HCFC-141b imports (bulk and contained in pre-blended polyols) through periodic follow-up with the importers and systems houses. The PMU will also focus on expeditious implementation of PU foam projects which will also facilitate implementation of this regulation.

*Manufacturing sector**Room AC manufacturing sector*

26. The World Bank informed that conversion of room AC manufacturing enterprises to HFC-32 covered under the project will be completed by June 2017. The World Bank also informed that as required under decision 68/39(e), the consumption of HCFC-22 is monitored based on quantities of HCFC-22 purchased and reported by the AC manufacturing enterprises. The total consumption of HCFC-22 in 2015 by these enterprises is 530.54 mt (29.18 ODP tonnes) including consumption for manufacturing and after-sales service. Table 4 presents the status of implementation and expected disbursement schedule of funds.

Table 4. Disbursement schedule for funds in Room AC manufacturing projects

| | Name of enterprise | Sub-grant Agreement amount (US \$) | Date of signature | Milestones achieved as of progress report | Disbursement (US \$) | | |
|----|-------------------------|------------------------------------|-------------------|---|----------------------|---------------------------|------------------|
| | | | | | Till date | Estimated up to Dec. 2017 | Total |
| 1 | Thrub Thong Hor | 632,727 | Nov-14 | Training completed | 126,545 | 506,182 | 632,727 |
| 2 | Saijo Denki | 1,056,954 | Nov-14 | PCR preparation underway | 211,390 | 845,564 | 1,056,954 |
| 3 | United Tech Development | 633,344 | Nov-14 | Training completed | 126,669 | 506,675 | 633,344 |
| 4 | Eminent Air (Thailand) | 725,914 | Jan-15 | Training completed | 145,183 | 580,731 | 725,914 |
| 5 | B.Grim Air-conditioning | 378,681 | Feb-15 | Equipment installed | 75,736 | 302,945 | 378,681 |
| 6 | Unico Consumer Products | 814,403 | Feb-15 | Training completed | 162,880 | 651,523 | 814,403 |
| 7 | PPJ Engineering | 979,918 | Aug-15 | Equipment installed | 195,983 | 783,935 | 979,918 |
| 8 | Supreme CNB Corporation | 1,129,994 | Jun-15 | Equipment installed | 225,998 | 903,996 | 1,129,994 |
| 9 | Bitwise (Thailand) | 811,393 | Mar-16 | Equipment installed | 162,278 | 649,115 | 811,393 |
| 10 | Subsukri | 350,716 | Mar-16 | Equipment installed | 70,143 | 280,573 | 350,716 |
| 11 | Pan Tycoon | 596,770 | To be signed | Proposal completed | | 596,770 | 596,770 |
| | Total | 8,110,814 | | | 1,502,805 | 6,608,009 | 8,110,814 |

27. The current tranche request would be adjusted for the funds relating to Better Living amounting to US \$284,180 and remaining unallocated funds amounting to US \$97,017⁷, and reflected in the revised Appendix 2-A of the Agreement.

PU foam manufacturing sector

28. Noting that, of the 23 foam enterprises, 108 SMEs and 53 micro-enterprises to be converted under HPMP stage-I, agreements have been signed with only ten enterprises and regulations would prohibit import of HCFC-141b in foam manufacturing except for spray foam from 1 January 2017, the Secretariat requested clarification from the World Bank on how the projects in this sector would be

⁷ Paragraph 9 of document UNEP/OzL.Pro/ExCom/74/48.

completed in the short time frame and what blowing agent will be used by the non-converted enterprises once the ban enters into force. The World Bank clarified the following:

- (a) There are 28 enterprises identified as of date for which the sub-grant agreements would be signed by December 2016. Additional enterprises are expected to participate in the project due to ban on HCFC-141b imports from 1 January 2017;
- (b) A draft proposal for the group project for 30 enterprises is currently under consideration; its implementation is expected to commence by November 2016;
- (c) The final list of enterprises is expected to be confirmed by the Government by the end of August 2017 along with the next tranche request; the World Bank has indicated that the Government would work on achieving completion of projects in the foam sector by 31 December 2017;
- (d) During 2017, PU foam manufacturers excluding spray foam producers will have to use HCFC-141b (either bulk or contained in pre-blended polyols) from the stockpiles that was stored prior to 31 December 2016; and
- (e) The next tranche request would include only the remaining funding that would be needed for foam sector and other activities under stage I of HPMP.

29. The estimated disbursement of funding for the identified 26 enterprises up to December 2017 would be US \$4,401,598. As indicated in paragraph 28(c) and (e), the final list of enterprises to be supported would be confirmed by August 2017 and savings in funds, as estimated, would be returned to the Multilateral Fund and/or adjusted against the future tranches.

TA and refrigeration servicing activities

30. Of the US \$302,965 bilateral contribution from the Government of Japan, US \$292,883 has been disbursed or committed for the planned TA activities. The balance of US \$10,082 is proposed to be allocated for upgrading the testing facility at the electrical and electronic institute which is responsible for testing AC performance under the national energy efficiency rating programme. Given that the total cost of this upgradation would be US \$20,000, another US \$10,000 would be allocated from the Green Building project that has a total fund allocation of US \$50,000. The remaining funds under Green Building project i.e., US \$40,000, would be used for risk assessment of HFC-32 AC with a cooling capacity ranging from 36,000–50,000 BTU per hour.

31. The World Bank also clarified that as required by decision 68/39(g) on reducing emission of HCFC-22 in the servicing sector, the DIW in collaboration with the Department of Skill Labor and Vocational School Commission are developing a training programme for good service practice for air-conditioning equipment, beneficiary AC manufacturers under the project will include proper service practices for HCFC-22-based AC in their training for servicing of new HFC-32 AC, and through HCFC-22 import quota reduction, HCFC-22 emission reduction would be facilitated.

32. With regard to decision 68/39(i) on the TA component for compressor development, the World Bank clarified that development of HFC-32 compressors with cooling capacity up to 50,000 BTU per hour will be completed in early 2017. Further, the Federation of Thai Industry has already submitted an official request to the local compressor manufacturer expressing the need to supply HFC-32 compressors for larger capacity AC systems (more than 24,000–50,000 BTU per hour) and was assured by the manufacturer that research and development is underway.

Level of disbursement

33. The Secretariat discussed with the World Bank utilisation of approved funds under the project till end of the year 2017. As shown in Table 3, of the total US \$14,826,285 so far approved, US \$14,680,303 is expected to be disbursed by December 2017. This does not include additional commitments and disbursements that are expected to be made in foam sector projects in pipe-line. Thus, funds under the third and future tranches would be necessary for continued implementation of projects in stage I.

34. The Secretariat also discussed with the World Bank the expected date of completion of stage I keeping in view the revision in tranche submission schedules and project implementation delays. Based on this, it was agreed that the revised operational completion date for stage I would be 31 December 2018.

Modifications to the Agreement

35. At the 74th meeting, the Secretariat indicated that the Montreal Protocol reduction schedule of Annex C, Group I substances for 2018 should be 834.84 ODP tonnes and not 881.21 ODP tonnes (row 1.1) and the maximum allowable total consumption of Annex C, Group I substances for 2018 should be 788.46 ODP tonnes and not 881.21 ODP tonnes (row 1.2). In addition, the withdrawal of the enterprise Better Living and the return of remaining unallocated funds from previous balances will result in a deduction of US \$381,197 from the third tranche request of US \$1 million. Accordingly, Appendix 2-A is updated and a new paragraph is included to indicate that the updated Agreement supersedes the Agreement approved at the 68th meeting as shown in Annex I to this document. The full revised agreement will be appended to the final report of the 77th meeting.

Conclusion

36. The Secretariat noted the Government of Thailand and the World Bank progressed in several activities during the period 2015 and 2016. The Government is at advanced stages of implementation of conversion projects for air-conditioning manufacturers and is expected to complete implementation of the projects in this sector by June 2017. Although the PU foam sector projects are delayed, the Government has developed a plan of action to expeditiously engage the potential beneficiaries and complete the conversion project; by August 2017, all interested beneficiaries in PU foam manufacturing except spray foam will be identified, and all enterprises will be largely converted by December 2017 with a total phase-out of 151.68 ODP tonnes of HCFC-141b bulk and 15.19 ODP tonnes of HCFC-141b contained in imported pre-blended polyol. The Government would implement the regulation for banning import of HCFC-141b, bulk or contained in pre-blended polyols, in the foam sector except spray foam applications by 1 January 2017, and the use of HCFC-22 in the manufacturing of AC with cooling capacity lower than 50,000 BTU per hour for the domestic market by 1 January 2017. The TA activities are also implemented to facilitate adoption of HFC-32 based equipment in the domestic market. While disbursement as at end of September 2016 amounts to 21 per cent of the funds approved under the second tranche, it will amount to 99 per cent by December 2017. Therefore, approval of the third tranche will allow the Government and the World Bank complete implementation of project activities in foam sector during the year 2017 and achieve sustained reduction of HCFC-141b.

RECOMMENDATION

37. The Executive Committee may wish to consider:

- (a) Noting:
 - (i) The progress report on implementation of the second tranche of stage I of the HCFC phase-out management plan (HPMP) for Thailand;
 - (ii) That the Fund Secretariat had updated Appendix 2-A of the Agreement between the Government of Thailand and the Executive Committee, to correct the consumption targets for 2018 and to reflect reduction in funding amounting to US \$381,197 plus agency support costs in the third tranche and that a new paragraph 16 had been added to indicate that the updated Agreement superseded that reached at the 68th meeting, as contained in Annex I to the present document;
- (b) Requesting that upon submission of the funding request for the fourth tranche of stage I of the HPMP, the Government of Thailand and the World Bank confirms:
 - (i) Completion of HCFC-22 phase-out in manufacturing ACs with a capacity of less than 50,000 BTU per hour and production of HFC-32-based AC by all manufacturing enterprises;
 - (ii) Enforcement of regulations prohibiting manufacturing HCFC-22-based AC with a capacity of less than 50,000 BTU per hour for sales in domestic markets, and using HCFC-141b in bulk and in pre-blended polyol in manufacturing in the foam sector except spray foam from 1 January 2017; and
 - (iii) A final plan of action of the foam sector and all remaining activities in the refrigeration servicing sector for the implementation of stage I of the HPMP and the amount of fund balances that might be returned and/or funding associated with the future tranches of stage I that might not be requested based on the plan of action, with the understanding that the total phase-out of HCFC specified in Appendix 2-A of the Agreement would be achieved; and
- (c) Approving the third tranche of stage I of the HPMP for Thailand, and the corresponding 2017 tranche implementation plan, at the amount of US \$618,803, plus agency support costs of US \$43,316 for the World Bank.

Annex I

TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT BETWEEN THE GOVERNMENT OF THE THAILAND AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS
(Relevant changes are in bold font for ease of reference)

16. This updated Agreement supersedes the Agreement reached between the Government of Thailand and the Executive Committee at the 68th meeting of the Executive Committee.

APPENDIX 2-A: THE TARGETS, AND FUNDING

| Row | Particulars | 2012 | 2013 | 2014* | 2015 | 2016 | 2017 | 2018 | Total |
|-------|--|-----------|------------|----------------|-----------|-----------|---------|---------------|-------------------|
| 1.1 | Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes) | n/a | 927.6 | 927.6 | 834.84 | 834.84 | 834.84 | 834.84 | n/a |
| 1.2 | Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes) | n/a | 927.6 | 927.6 | 834.84 | 834.84 | 834.84 | 788.46 | n/a |
| 2.1 | Lead IA (World Bank) agreed funding (US \$) | 4,817,166 | 9,706,154 | 618,803 | 3,063,542 | 1,000,000 | 753,630 | 2,408,580 | 22,367,875 |
| 2.2 | Support costs for Lead IA (US \$) | 337,202 | 679,431 | 43,316 | 214,448 | 70,000 | 52,754 | 168,601 | 1,565,752 |
| 2.3 | Cooperating IA (Japan) agreed funding (US \$) | 302,965 | 0 | 0 | 0 | 0 | 0 | 0 | 302,965 |
| 2.4 | Support costs for Cooperating IA (US \$) | 39,385 | 0 | 0 | 0 | 0 | 0 | 0 | 39,385 |
| 3.1 | Total agreed funding (US \$) | 5,120,131 | 9,706,154 | 618,803 | 3,063,542 | 1,000,000 | 753,630 | 2,408,580 | 22,670,840 |
| 3.2 | Total support costs (US \$) | 376,587 | 679,431 | 43,316 | 214,448 | 70,000 | 52,754 | 168,601 | 1,605,137 |
| 3.3 | Total agreed costs (US \$) | 5,496,718 | 10,385,585 | 662,119 | 3,277,990 | 1,070,000 | 806,384 | 2,577,181 | 24,275,977 |
| 4.1.1 | Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 67.86 |
| 4.1.2 | Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0 |
| 4.1.3 | Remaining eligible consumption for HCFC-22 (ODP tonnes) | | | | | | | | 648.74 |
| 4.2.1 | Total phase-out of HCFC-123 agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 0.00 |
| 4.2.2 | Phase-out of HCFC-123 to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.2.3 | Remaining eligible consumption for HCFC-123 (ODP tonnes) | | | | | | | | 3.20 |
| 4.3.1 | Total phase-out of HCFC-124 agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 0.00 |
| 4.3.2 | Phase-out of HCFC-124 to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.3.3 | Remaining eligible consumption for HCFC-124 (ODP tonnes) | | | | | | | | 0.08 |
| 4.4.1 | Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 151.68 |
| 4.4.2 | Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.4.3 | Remaining eligible consumption for HCFC-141b (ODP tonnes) | | | | | | | | 53.57 |
| 4.5.1 | Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 0.00 |
| 4.5.2 | Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.5.3 | Remaining eligible consumption for HCFC-142b (ODP tonnes) | | | | | | | | 0.12 |
| 4.6.1 | Total phase-out of HCFC-225, 225ca and 225cb agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 0.00 |
| 4.6.2 | Phase-out of HCFC-225, 225ca and 225cb to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.6.3 | Remaining eligible consumption for HCFC-225, 225ca and 225cb (ODP tonnes) | | | | | | | | 2.30 |
| 4.7.1 | Total phase-out of HCFC-141b contained in imported pre-blended polyols agreed to be achieved under this Agreement (ODP tonnes) | | | | | | | | 15.19 |
| 4.7.2 | Phase-out of HCFC-141b contained in imported pre-blended polyols to be achieved in previously approved projects (ODP tonnes) | | | | | | | | 0.00 |
| 4.7.3 | Remaining eligible consumption for HCFC-141b contained in imported pre-blended polyols (ODP tonnes) | | | | | | | | 0.49 |

*The third tranche should have been submitted in 2014.