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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Sixty-first Meeting
Montreal, 5-9 July 2010

PROJECT PROPOSALS: THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

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

Phase-out

- Implementation of the NPP: regulations, training programme and monitoring (fifth tranche) UNEP

Process Agent

- Phase-out of CTC as process agent at Sinuiju Chemical Fibre Complex and at Vinalon 2.8 Complex UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Democratic People's Republic of Korea

(I) PROJECT TITLE	AGENCY
CFC phase out plan	UNEP, UNIDO

(II) LATEST ARTICLE 7 DATA (ODP Tonnes)					Year: 2009
CFC: 27.2	CTC: 0	Halons: 0	MB: 0	TCA: 0	

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP Tonnes)											Year: 2009		
Substances	Aerosol	Foam	Halon	Refrigeration		Solvent	Process Agent	MDI	Lab Use	Methyl Bromide		Tobacco fluffing	Total Sector Consumption
				Manufacturing	Servicing					QPS	Non QPS		
CFC					27.2								27.2
CTC							34.1						34.1
Halons													0
Methyl Bromide													0
Others													0
TCA													0

(IV) PROJECT DATA		2005	2006	2007	2008	2009	2010	Total
Montreal Protocol Consumption Limits		CFC	220.9	220.9	66.3	66.3	66.3	
Maximum Allowable Consumption (ODP Tonnes)		CFC	177.	120.	66.	48.	30.	
Project Costs (US\$)	UNEP	Project Costs	234,600.	163,400.	100,000.	20,000.	10,000.	528,000.
		Support Costs	30,498.	21,242.	13,000.	2,600.	1,300.	68,640.
	UNIDO	Project Costs	536,000.					536,000.
		Support Costs	40,200.					40,200.
Total Funds Approved in Principle (US\$)		Project Costs	770,600.	163,400.	100,000.	20,000.	10,000.	1,064,000.
		Support Costs	70,698.	21,242.	13,000.	2,600.	1,300.	108,840.
Total Funds Released by the ExCom (US\$)		Project Costs	770,600.	163,400.	100,000.	20,000.	0.	1,054,000.
		Support Costs	70,698.	21,242.	13,000.	2,600.	0.	107,540.
Total Funds Requested for Current Year (US\$)		Project Costs					10,000.	10,000.
		Support Costs					1,300.	1,300.

(V) SECRETARIAT'S RECOMMENDATION:	Individual Consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of the Democratic People's Republic of Korea, UNEP, as the lead implementing agency, has submitted to the 61st Meeting of the Executive Committee a progress report on the implementation of the 2008-2009 work programme of the national CFC phase-out programme (NPP) together with the verification report required by the Agreement. The submission also includes a request for funding for the 2010 work programme at a total cost of US \$10,000 plus agency support costs of US \$1,300.

Background

2. The NPP for Democratic People's Republic of Korea was approved at the 47th Meeting of the Executive Committee at a total cost of US \$1,064,000 plus agency support costs of US \$68,640 for UNEP and US \$40,200 for UNIDO, to completely phase out CFC consumption in the country by 2009. Since then, the Executive Committee has approved US \$1,054,000, plus agency support costs of US \$67,340 for UNEP and US \$40,200 for UNIDO for the implementation of the first four work programmes.

3. On behalf of the Government of the Democratic People's Republic of Korea, UNEP submitted to the 57th Meeting a progress report on the implementation of the 2008 work programme of the NPP, a required verification report, and a request for funding for the 2009 work programme. During its deliberations, the Executive Committee sought a clarification regarding UNEP's request for HPMP project preparation and for the implementation of the fifth tranche of the NPP for the Democratic People's Republic of Korea, as the UNDP project office used by UNEP to distribute funds in that country had been closed. Following a discussion, the Committee decided to defer consideration of the HPMP and the fifth tranche of the NPP to the 58th Meeting, upon confirmation by UNEP regarding the means of distributing the funds to the Democratic People's Republic of Korea (decision 57/16(a)).

4. UNEP reported to the 58th Meeting that the UNDP office would not be fully operational before late 2009 in the interim the World Food Programme (WFP) could provide administrative services to UNEP by facilitating payments for activities under the projects. A Memorandum of Understanding (MOU) would have to be negotiated between UNEP and the WFP, and UNEP would be responsible for certifying required outputs and financial reports. Further to the discussion, the Executive Committee decided to defer consideration of the request for the fifth tranche of the NPP to the 61st Meeting, pending further information from UNEP on the administrative arrangements and costs associated with transferring financial resources to the Government of the Democratic People's Republic of Korea (decision 58/33).

Progress report and verification

5. During the implementation of the 2008-2009 work programme of the NPP, the regulation for fake refrigerants import control came into force in January 2009. An additional 100 refrigeration technicians and 50 customs officers were trained. The total number of refrigeration technicians and customs officers trained from 2005 to end of 2009 reached 792 and 766, respectively. The code of good service practices was completed and distributed to refrigeration service centres. The policy measure to mandate "all education agencies related with the CFC/HCFC refrigerant and refrigeration equipment shall incorporate the concept of ozone layer protection in their curriculum" was approved by the relevant authorities. Several public awareness activities were implemented and the project monitoring unit continued to function.

6. The verification report on the levels of CFC consumption concluded that the total amount of CFCs imported in 2008 of 33.5 ODP tonnes was 5.2 ODP tonnes lower than the CFC quotas issued by the Government. The report also indicated that the import and consumption of CFCs is controlled by the Government based on strict laws and regulations in place. No cases of CFC smuggling were reported in 2008.

7. As of April 2010, of the US \$1,054,000 so far approved, US \$1,017,908 had been disbursed or committed. The balance of US \$36,092 will be disbursed during 2010.

2010 annual work programme

8. Work programme activities for 2010 include continued operation of the enforcement centre for ODS import and export, to assure that no CFCs will be imported into the country in 2010, to review the import of HCFC and to study the possible HCFC import controls. They also cover awareness education programmes, the monitoring of ODS recovery and recycling centres, providing technical assistance to service workshops, organizing the verification of ODS import and actual use in 2009, and monitoring and evaluation of the activities contained in the NPP.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

9. The 2008 CFC consumption of 33.5 ODP tonnes reported by the Government of the Democratic People's Republic of Korea under Article 7 was already 32.8 ODP tonnes below the allowable level of 66.3 ODP tonnes for that year under the Protocol, and 14.5 ODP tonnes below the 48.0 ODP tonnes under the Agreement with the Executive Committee. CFC consumption in 2009 has been estimated at 27.2 ODP tonnes. UNEP indicated that the Government would be able to maintain zero consumption of CFCs beyond 2009.

10. In regard to the transfer of funds to the Government of the Democratic People's Republic of Korea, UNEP and the WFP signed a MOU on 31 October 2009 under which WFP will provide payment and administrative services on behalf of UNEP under the United Nations Rules and Regulations on a transaction-by-transaction basis. This MOU is for all UNEP activities in the country, including those funded by the Multilateral Fund. The MOU is valid until 31 December 2010, but it can be extended for subsequent periods for a total duration of nine months by mutual agreement, after which a new MOU could be put in place, depending on UNEP's needs. The WFP charges a 4 per cent transaction cost (above UNEP's support costs) which the Government of the Democratic People's Republic of Korea has agreed to cover.

11. UNEP has already released the full funding amount associated with the implementation of the NPP to WFP (the last paid on 28 April 2010). UNEP is currently following up with WFP Pyongyang to process the outstanding payments in the country. UNEP also reported that the US \$10,000 associated with the final tranche of the NPP, once approved, can be transferred to the country under the current MOU with the WFP. Also, the Secretariat was advised recently that UNDP had reopened its office in Pyongyang and has restarted operations.

12. In March 2010 UNIDO committed the remaining funds available for purchasing additional equipment which will be delivered in August 2010 (no cash transfers of funds to the country is involved). The NPP project will be completed by October 2010.

RECOMMENDATION

13. The Executive Committee might wish to consider the request for the approval of the fifth and final tranche of the national CFC phase-out programme (NPP) in the Democratic People's Republic of Korea, in light of the information provided on the administrative arrangements and costs associated with transferring financial resources to the country.

**PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECTS
DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA**

PROJECT TITLE		BILATERAL/IMPLEMENTING AGENCY
(a)	Phase-out of CTC as process agent at Sinuiju Chemical Fibre Complex and at Vinalon 2.8 Complex	UNIDO

NATIONAL CO-ORDINATING AGENCY	National Coordinating Committee for Environment, Ozone Cell
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LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2009, AS OF JUNE 2010)

Annex B, Group II	0
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B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2009, AS OF JUNE 2010)

ODS	Subsector/quantity
CTC	34.1

HCFC consumption remaining eligible for funding (ODP tonnes)	n/a
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CURRENT YEAR BUSINESS PLAN ALLOCATIONS		Funding US \$	Phase-out (ODP tonnes)
	(a)	1,075,000	281.6

PROJECT TITLE:	(a)
ODS use at enterprise (ODP tonnes):	0
ODS to be phased out (ODP tonnes):	281.6
Project duration (months):	12
Project costs (US \$):	
Incremental Capital Cost:	658,544
Contingency (10 %):	65,854
Incremental Operating Cost:	4,766
Total Project Cost:	729,164
Local ownership (%):	100
Export component (%):	0
Requested grant (US \$):	729,164
Cost-effectiveness (US \$/kg):	2.59
Implementing agency support cost (US \$):	54,688
Total cost of project to Multilateral Fund (US \$):	783,852
Status of counterpart funding (Y/N):	Y
Project monitoring milestones included (Y/N):	Y

SECRETARIAT’S RECOMMENDATION:	For individual consideration
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PROJECT DESCRIPTION

14. UNIDO, on behalf of the Government of the Democratic People's Republic of Korea, has submitted for consideration at the 61st Meeting the project proposal related to the phase out of CTC in process agent applications in the Democratic People's Republic of Korea. The project relates to the phase out of CTC as a process agent in Sinuiju Chemicals Fibre Complex (SCFS) and 2.8 Vinalon Complex (VNL) requesting support from the Multilateral Fund at the level of US \$729,164 plus support costs for UNIDO of US \$54,688. The project proposal is related to the CTC phase-out plan of the Democratic People's Republic of Korea approved at the 41st Meeting.

Background

15. At its 41st Meeting, the Executive Committee approved in principle an agreement with the Government of the Democratic People's Republic of Korea to phase-out the consumption of CTC at a total cost of US \$5,684,840 plus support costs of US \$426,363 for UNIDO. The Committee also approved funding of US \$3,500,000 plus support costs of US \$262,500 for the first tranche of the project. Further tranches were approved at the 46th, 49th, 52nd, and 55th Meetings. With the approval at the 55th Meeting, all tranches for the plan have been funded.

16. The phase-out plan included a variety of activities in the solvent cleaning, process agent and fumigation sectors. It is supplemented by individual projects in the solvent cleaning sector that were approved prior to preparation of the plan. The plan foreshadowed the submission of additional requests for funding for the phase-out of CTC applications that were not at the time classified as process agents by the Parties. At its 49th Meeting, the Executive Committee approved a separate project for the phase-out of CTC consumption associated with two process agent applications in the pharmaceutical sub-sector, with associated cost of US \$884,399 plus US \$66,330 in support costs, resulting in the total approved for the plan of US \$6,569,239 plus support costs of US \$492,693.

17. At the 52nd Meeting, the Executive Committee was informed that in two of the four process agent plants to be converted, some parts of the equipment were deemed to fall under the dual-use restrictions of the International Chemical Weapons Convention and had been detained at the Chinese port. Subsequently, in October 2006 the UN Security Council adopted Resolution 1718 (2006), which also contains similar trade restrictions. In its decision 52/40 the Executive Committee urged UNIDO to find a solution, compliant with UN Security Council Resolution 1718 (2006) and the conditions of the Chemical Weapons Convention, to overcome the impediments and complete the implementation of the process agent sector activities. At the same time, it requested UNIDO to provide a status report on the progress achieved with the activities at SCFC and VNL.

18. The Executive Committee discussed during its 55th Meeting the status report on the implementation of the phase-out of CTC in the Democratic People's Republic of Korea at SCFC and VNL. In its related decision 55/12, the Executive Committee noted that some equipment items required for the conversion had been purchased but were deemed to fall under the dual-use restrictions of the International Chemical Weapons Convention, to which the Democratic People's Republic of Korea had not yet adhered. Based on this, the Executive Committee requested UNIDO to carry out a number of activities such as:

- (a) To sell the relevant equipment items and to report back to the Executive Committee, presenting a financial report on all disbursements so far incurred, including storage cost. At the 57th Meeting, the Executive Committee was advised in document UNEP/OzL.Pro/ExCom/57/15 that a buyer had been found. The buyer offered

a total of US \$50,000 for the equipment, and would pay the transport cost. The original cost of the equipment was US \$400,000; and

- (b) To continue with the implementation of all other components of the plan for the terminal phase-out of CTC, without using any remaining funds associated with CTC phase-out activities at SCFC and VNL. UNIDO has provided a progress report to the Secretariat, which contained information indicating that all other activities foreseen under the plan will be completed by end of April 2009.

19. At the request of the Executive Committee, the Secretariat sent a letter to the Government of the Democratic People's Republic of Korea advising of the possible cancellation of the plan for terminal phase-out of CTC if all the activities proposed in the plan or the approved annual work programmes, including those related to SCFC and VNL, were not completed by 30 April 2009. The Secretariat informed the Government of the Democratic People's Republic of Korea accordingly in a letter dated 11 August 2008.

20. The Executive Committee left open the possibility that, in the event that the Democratic People's Republic of Korea was not able to complete the conversion at SCFC and VNL, the country could resubmit, no later than the 59th Meeting of the Executive Committee, a funding request for the conversion of these two enterprises (decision 55/12). This was on the understanding that an alternative approach could be found to be technically feasible and economically viable, and that the country will in any event achieve compliance with the CTC phase-out schedule under the Montreal Protocol.

21. For the 59th Meeting, two project proposals were submitted by UNIDO on behalf of the Democratic People's Republic of Korea to phase-out CTC as process agent using an alternative approach in SCFC and VNL. The projects proposed to convert the production capacity in two plants to produce unsaturated polyester resin in VNL and polyacrylate resin in SCFC. During the discussion at the 59th Meeting when these two project proposals were discussed, the members of the Executive Committee referred to decision 58/25, by which consideration of the HPMP for the Democratic People's Republic of Korea had been deferred to the 61st Meeting due to lack of means of disbursing funds, and decided to also defer the consideration of the two project proposals to the 61st Meeting.

22. The project proposal submitted to the 61st Meeting relates to the decision 55/12, combines the two previously separate projects at SCFC and VNL and presents an alternative approach for the implementation of activities of the CTC phase-out plan for the Democratic People's Republic of Korea at the two companies.

23. The Democratic People's Republic of Korea has reported under Article 7 and country programme data consistently a consumption of zero ODP tonnes of CTC for the years 2006, 2007 and 2008. For the year 2009, country programme data and Article 7 data was received by the Fund Secretariat and the Ozone Secretariat on 7 June 2010. The country programme data shows a use of 31 metric tonnes (34.1 ODP tonnes), while the Article 7 data reporting shows a consumption of zero ODP tonnes. The "Annual performance verification report, Dec. 2006-2007" of the CTC consumption phase-out plan in the Democratic People's Republic of Korea submitted to the 55th Meeting informed that in the year 2007, the remaining 9.2 metric tonnes from the CTC stockpile were supplied by the CTC bank to the pharmaceutical factories (5.2 metric tonnes to Lanam and 4 metric tonnes to Hungnam) enabling their production to continue through the first quarter of 2007. The CTC stocks were at the end of 2007 totally depleted. The apparent discrepancies between the country programme and Article 7 data submitted by the Democratic People's Republic of Korea could not be resolved before finalisation of this document. However, the Secretariat will work on collecting relevant information and provide the Executive Committee with more insight at the 61st Meeting.

Technical description of the SCFC sub-project

24. The sub-project at SCFC will complete the phase out of 99.0 metric tonnes (108.9 ODP tonnes) of CTC, based on the 2002 consumption by the company; 2002 was the base year for the preparation of the CTC phase-out plan. At SCFC, CTC had been used to make chlorinated rubber, which was further processed to chlorinate rubber enamel, an anti-corrosive paint. According to the information provided by UNIDO, the plant was closed in 2006 to allow the dismantling of the plant in preparation for the arrival of the goods subsequently deemed to fall under the dual-use provision of the UN Security Council Resolution 1718. UNIDO proposed to avoid the chlorination processes with the associate need for glass-lined reactors, by changing the end product from chlorinated rubber enamel to polyacrylate resin. The reaction to that new end product is through an intermediate product, methyl methacrylate. The submission to the 61st Meeting, in contrast to the submission to the 59th Meeting, recognised the possibility of purchasing cost effectively methyl methacrylate on the open market, and consequently removed the related items from the proposal.

25. SCFC is a nationally-owned company manufacturing a variety of basic chemicals with manufacturing facilities originating from China; the manufacturing of chlorinated rubber by SCFC started in 1984. In the manufacturing of the anti-corrosive paint with chlorinated rubber, CTC is used in the chlorination of the rubber and as a formulation agent in the manufacturing of the enamel. The company produces on average 24.75 metric tonnes of chlorinated rubber and 272.15 metric tonnes of chlorinated rubber enamel per year. The production figures from 2002 to 2005, which were enclosed with the project submission and used for the above averages, show a continuously declining production of chlorinated rubber and of the associated enamel. Both, including the associated CTC consumption, declined in the order of 30 per cent between 2002 and 2005.

26. The submission included a detailed description of the presently used CTC-based chlorinated rubber production process. In addition, the replacement process has been described in detail. UNIDO argued in the project submission that lower anti-corrosive characteristics of the polyacrylate resin and shorter protection period as compared to the chlorinated rubber enamel will lead to an increased demand for the product to make up for the shortcomings in the properties, so that the plant of 371 tonnes capacity for chlorinated rubber enamel needs to be replaced by one plant with 600 tonnes capacity for polyacrylate resin in order to provide paint on an equal performance basis. The implementation of this sub-project is supposed to take 21 months.

Technical description of VNL sub-project

27. The sub-project at VNL will complete the phase out of 157 metric tonnes (172.7 ODP tonnes) of CTC, based on the 2002 consumption of the company. At VNL, CTC had been used to produce chlorosulphonated polyethylene (CSPE), chlorinated polyethylene (CPE) and chlorinated lacquer (CPEL). According to the information provided by UNIDO, this plant was also closed in 2006 to allow dismantling in preparation for the arrival of the goods subsequently deemed to fall under the dual-use provision of the UN Security Council Resolution 1718. On the project proposal to the 59th Meeting, UNIDO proposed to avoid the chlorination process, by changing the end product from CSPE, CPE and CPEL to a non-saturated polyester resin. In order to increase cost effectiveness, UNIDO suggested to change the end product for VNL from non-saturated polyester resin to, as for SCFC, polyacrylated resin. In order to produce this end-product, VNL will request SCFC to produce the product on the to-be-converted line of SCFC, by running this line in three shifts; this would be one more shift than previously. This three shift utilisation would approximately lead to the same capacity as previously represented by two plants.

28. VNL is a state-owned company manufacturing a variety of basic chemicals such as caustic soda, hydro chloric acid, vinylon fibre, vinyl chloride, dyes, pesticides, etc.; the output of chlorine is about 25,000 tonnes/year. In the past, there had been CTC production at VNL which was closed in 2006 with

support of the phase-out plan. The enterprise was founded in 1978 and is operating with equipment bought from the former German Democratic Republic. The installed annual capacities for the products made using CTC as a process agent are 100 metric tonnes/year of CSPE of which, on average, 26.43 metric tonnes were produced; 500 metric tonnes of CPE of which, on average, 211.49 metric tonnes were produced; and 500 metric tonnes of CPEL, of which, on average, 180.28 metric tonnes were produced. The production of CSPE and CPE started in 1982, and of CPEL in 1983. The production figures for the years 2002 to 2005 for the three products manufactured, CPE, CSPE and CPEL, as well as the figures for the associated CTC use are part of the project proposal, and have formed the basis for the above averages. While, contrary to CPEL, CPE and CSPE and the associated CTC use increase from 2002 to 2003, for all products and all associated CTC consumption there is a continuous decrease from 2003 onwards. For CPE and CPSE the output in 2005 is lower by about 50 per cent, and for CPEL by more than 40 per cent as compared to the maximum.

29. In VNL, CPE and CSPE were used as additives to polyvinyl chlorine and rubber to produce paint for chemical process facilities, pipes and other items. The replacement product, unsaturated polyacrylate (UP) resin, has only a limited capability to replace CPE and related products.

Project cost

30. UNIDO provided a cost calculation for the project consisting of incremental capital costs (ICC) and incremental operating costs (IOC) for the period of one year for both plants. The project submission includes a list of equipment and the exact value of the equipment to be delivered, a breakdown of the IOC and savings before and after the conversion, a list of dismantled equipment to be destroyed, and a list of the equipment delivered by UNIDO under the original replacement project. The project costs have been provided in detail and lead to costs of US \$658,544 for establishing two production lines for the polymerisation of the monomer to unsaturated polyacrylate resin, and US \$4,766 for the IOC for one year for both plants. The total project cost, including a contingency of 10 per cent for ICC and agency support cost, comes to US \$783,852. The cost effectiveness of the activity is US \$2.59/kg ODP.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

31. In decision 55/12 the Executive Committee had decided that in the event that the Democratic People's Republic of Korea was not able to complete the conversion at VNL and SCFC the country could resubmit, no later than the 59th Meeting of the Executive Committee, a funding request for the conversion of these two enterprises should an alternative approach to be found technically feasible and economically viable, on the understanding that the country will at any event achieve compliance with the CTC phase-out schedule under the Montreal Protocol. The Secretariat assessed the project submission for SCFC and VNL on the basis of this decision, and in light of a number of conditions to be fulfilled, specified in that decision:

- (a) Since the decision at the 55th Meeting and as reported to the 57th Meeting, the originally envisaged conversion of the two enterprises could not be completed and the associated equipment has in the mean time been sold. The underlying reason, UN Security Council Resolution 1718, remains in force, therefore, the conversions of the manufacturing facilities at the two enterprises cannot be completed as originally planned when submitting the phase-out plan for CTC in D.P.R. Korea to the 41st Meeting;

- (b) UNIDO submitted the two project proposals to the 59th Meeting, and combined and otherwise modified them before submitting the joint project to 61st Meeting, fully in line with the request by the Executive Meeting; and
- (c) The compliance of the country with the CTC phase-out schedule under the Montreal Protocol and also under the Agreement has been achieved, since the manufacturing facilities using CTC in SCFC and VNL were disassembled in 2006 in expectation of the arrival, in particular, of glass-lined reactors, at the manufacturing sites, and have consequently discontinued using CTC. In addition, the country ceased the production of CTC. Therefore, according to the information available, D.P.R. Korea is in compliance with the CTC phase-out schedule under the Montreal Protocol and is in compliance with the Agreement related to the CTC phase-out plan for the Democratic People's Republic of Korea.

32. The technical feasibility of the proposed conversion was assessed by the Secretariat. From the impression of the Secretariat as well as according to the repeated reassurance by UNIDO - both in the proposal submitted as well as in subsequent correspondence between the Secretariat and UNIDO - the proposed conversion seemed to be possible without breach of the UN Security Council Resolution 1718. This is essentially the case because the products have been changed from chlorine-containing substances to alternatives, removing chlorine from the production process, and therefore, avoiding the installation of banned equipment.

33. The Secretariat looked into the general applicability of the solution proposed by UNIDO. It appears that, given the restrictions of the UN Security Council Resolution 1718, the selected solution to replace the end product instead of looking for different ways for chlorination is technically the most meaningful way forward. However, replacing the end product leads to the need to establish substantive manufacturing capacity to replace existing capacity. The Secretariat discussed with UNIDO the question to what degree the replacement constitutes a technology upgrade. UNIDO advised that different replacement products are used in the process and not new, technologically upgraded processes for replacing the old products. Therefore, UNIDO believes that the selected technology cannot be considered as a technology upgrade; but rather can be seen as a technology downgrade. UNIDO also advised that the substitute product for VNL has a low effectiveness in replacing the original product.

34. The Secretariat came to the conclusion that due to the difference in product characteristics, the conversion at VNL is approaching more the concept of a compensation for loss of production and moves away from the concept of conversion, since the characteristics of the product post conversion differ from the baseline product; the conversion, taking into account capacity and possibility to utilise the product, does clearly not constitute a technology upgrade. However, given the fact that under Security Resolution 1718 effectively equipment to handle chlorinated products cannot be provided, a significant change in the final product is difficult to avoid, and the proposed way forward appears meaningful.

35. The replacement products chosen seem to be suitable for the application and are acceptable to the country. The costs of the equipment and conversion appear to the Secretariat to be acceptable in both cases, given the challenges of implementation in the Democratic People's Republic of Korea.

36. The Executive Committee mentioned the economic viability of the approach as a criterion to decide on funding. For this particular project, being located in a country with a planning economy, and with limited involvement in international trade, the economic viability is difficult to assess. However, the Secretariat has provided below some observations in the hope that these will give additional insight for the members of the Executive Committee:

- (a) The original plan as presented to the 41st Meeting foresaw for the process agent sector expenditures of US \$1,258,146; the project proposals submitted by UNIDO to the 59th Meeting cover two of the four companies in the sector at that time; these companies represented 51.7 per cent of the sector consumption. On a pro rata basis, the combined funding originally foreseen for these two activities was in the order of US \$650,000. The proposal to the 59th Meeting proposed conversion cost of US \$1,301,952 for SCFC and US \$1,769,614 for VNL. In the proposal to 61st Meeting, UNIDO has changed the concept of producing two new end products to one end product and removed the production of the intermediate monomer from the process. This fundamental change of the process design reduced the combined project cost for SCFC and VNL to US \$729,164, which is close to the original funding level of US \$650,000 for these activities in the original CTC phase-out plan.
- (b) The Secretariat had discussed with UNIDO during the 59th Meeting the possibility to close the plants and purchase the products on the world market at competitive prices. UNIDO advised that the possibility of production closure had been investigated during the preparation of the activities. The Government had decided to keep the production capacities open, since these factories are deeply integrated in the chemical production chain in the country and provide important employment. Moreover, the compensation for production closure would potentially be higher than the conversion costs; and
- (c) The capacity of the facilities planned for the production of the replacement products at SCFC and VNL are small in comparison with the plants operating to deliver cost effectively to the world market, and if the Democratic People's Republic of Korea would have to recover the cost of the investment into their new plant it is unlikely that the facilities would be economically viable if used to compete in an open market.

37. When decision 55/12 was taken, the Executive Committee expressed its willingness to look into alternative ways to support the Democratic People's Republic of Korea in the CTC phase out in the two enterprises. However, at that time it was unclear which costs might be involved. The Secretariat prepared the table below to show the changes in the cost of conversion to assist the Executive Committee to better understand the magnitude of these changes.

Item	Absolute costs (US \$)	Relative to submission to 61 st Meeting
Original proposal for activities at SCFC and VNL, as part of the CTC sector plan	650,000	89%
Phase-out plan in total	6,569,239	901%
Original equipment value of goods under the dual use provision / Security Council Resolution 1718	400,000	55%
Cost recovery from selling already purchased goods under the dual use provision / Security Council Resolution 1718	50,000	7%
Cost of planned conversion proposed to 59 th Meeting	3,071,566	421%
Cost of planned conversion proposed to 61 st Meeting	729,164	100%

38. With the submission provided by UNIDO, the Executive Committee has the possibility to discuss the possible funding for the two companies SCFC and VNL based on a concrete project proposal. The cost of that proposal is broadly similar to that in the original sector plan. However, the Democratic People's Republic of Korea had agreed in the agreement approved by the Executive Committee at the 49th Meeting that the "Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations [...], it is precluded from applying for or receiving further

funding from the Multilateral Fund in respect to the Substance”, i.e. CTC. The Executive Committee had arguably fulfilled its funding obligation by approving and disbursing 100 per cent of the resources agreed in principle. However, the subsequent decision 55/12 allowed the country to resubmit the related components of the phase-out plan, which would support the country in ensuring the sustainability of the phase-out.

39. The country has completed the CTC production sector phase-out and all other CTC consumption sector phase-out activities, and since 2006 has reported consumption and a production of zero ODP tonnes of CTC under Article 7 of the Protocol. Taking the above into account, it appears that the proposed projects, while appearing generally meaningful and possibly important to sustain compliance in the midterm, are presently not needed for compliance purposes.

RECOMMENDATION

40. The Executive Committee may wish to consider whether to approve at this point in time the project “Phase-out of CTC as process agent at Sinuiju Chemical Fibre Complex and 2.8 Vinalon Complex” at a cost of US \$729,164 plus agency support costs of US \$54,688, in light of the comments provided by the Secretariat in document UNEP/OzL.Pro/ExCom/61/34.
