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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Fiftieth Meeting
New Delhi, 6-10 November 2006

PROJECT PROPOSALS: ROMANIA

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

Halon

- Halon management programme — UNIDO

Phase-out

- Terminal phase-out management plan of CTC production/consumption for process agent uses — UNIDO

Production

- Sector plan for production sector (second tranche) — UNIDO

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PROJECT EVALUATION SHEET – NON MULTI-YEAR PROJECTS
ROMANIA

PROJECT TITLES		BILATERAL/IMPLEMENTING AGENCY
(a)	Halon management programme	UNIDO

NATIONAL CO-ORDINATING AGENCY:	National Ozone Unit of Romania

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2004, AS OF SEPTEMBER 2006)

Annex A, Group, CFCs	116.748		

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2004, AS OF SEPTEMBER 2006)

ODS			
Halon	1.764		

Halon consumption remaining eligible for funding (ODP tonnes)	1.764

CURRENT YEAR BUSINESS PLAN ALLOCATIONS		Funding US $ million	Phase-out ODP tonnes
	(a)	0.0697	1.764

PROJECT TITLE: Halon management programme in Romania	**(a)**
ODS use at enterprise (ODP tonnes):	1.764
ODS to be phased out (ODP tonnes):	1.764
ODS to be phased in (ODP tonnes):	N/A
Project duration (months):	24
Initial amount requested (US $):	US $47,000
Final project cost:	
Incremental Capital Cost (US $)	
Contingency (10%) (US $)	
Incremental Operating Cost (US $)	
Total Project Cost (US $)	US $35,000
Local ownership (%):	N/A
Export component (%):	0%
Requested grant (US $):	US $35,000
Cost-effectiveness (US $/kg):	N/A
Implementing agency support cost (US $):	US $3,150
Total cost of project to Multilateral Fund (US $):	US $38,150
Status of counterpart funding (Y/N):	N/A
Project monitoring milestones included (Y/N):	Yes

SECRETARIAT'S RECOMMENDATION	Blanket approval at the costs indicated above on the understanding that no further funding would be requested for halon sector after the approval of this project

PROJECT DESCRIPTION

1. UNIDO has submitted, on behalf of the Government of Romania, a project aiming at establishing and implementing the national halon management programme which will support Romania in meeting its obligations under the Montreal Protocol. The total cost of the project is US $35,000 plus agency support costs of US $3,150, and includes:

- International consultant on halon management (1 x 0.5 month x US $5,000) (US $2,500);
- International consultant on halon substitutes/alternative fire fighting technologies (1 x 0.4 month x US $5,000) (US $2,500);
- National experts (3 x 2 months x US $1,000) (US $6,000);
- Management, coordination and monitoring (through the whole project duration (US $3,000);
- Information materials elaboration, printing and dissemination (300 copies) (US $6,000);
- Workshop for awareness raising and information dissemination, training and capacity building for respective authorities, industry and other stakeholders and decision makers (US $15,000);
- Support costs at 9 per cent (US $3,150).

2. In Romania, halon 1211 is used in portable fire extinguishers and halon 1301 is used in fixed fire fighting systems protecting installations and valuable property in various sectors of the national economy including the military, state companies producing military equipment, civil aviation, and the Ministry of Economy and Trade.

3. Romania does not produce halons and fully depends upon the imports from other countries. Halon 1211 is imported in bulk quantities, and then used to refill portable fire extinguishers by local fire fighting equipment distributors. Portable halon 1211 extinguishers are also imported. Halon 1301 is imported for the fixed fire fighting systems. Halon 2402 was imported in 1997 (60 kilograms) but is no longer used.

4. In June and July 2006, a comprehensive survey of Romania's fire fighting sector was conducted for the preparation of this request. The installed capacity is estimated at 12.12 ODP tonnes for halon 1211 and 55.21 ODP tonnes for halon 1301. Romania's latest halon consumption as reported pursuant to Article 7 was 1.76 ODP tonnes in 2004 which is more than half of its baseline of 3.49 ODP tonnes.

5. Romania did not import halon except 3 times in the last eight years despite the fact that its baseline is 3.49 ODP tonnes. Its largest level of imports in the last eight years was 1.76 ODP tonnes. No halon 2402 has been imported in the last eight years, and only 0.16 metric tonnes of halon 1301 were imported once over that period (i.e. in 2000). As indicated in the proposal, the use of halon is very limited and mostly within the Ministry of National Defence

and the aviation sectors, although there is some used in companies under the Ministry of Economy and Trade. 80 per cent of the installed capacity is in the Ministry of National Defence and the aviation industries.

6. Four users have already been identified with halon needs for 2006 including: Carpatair (7 kilograms of halon 1211 and 160 kilograms of halon 1301); MFA Mizil—an equipment manufacturing/servicing company (1.10 metric tonnes of halon 1301); Bucharest Mechanical Plant (150 kilograms of halon 1301); and the Ministry of National Defence (150 kilograms of halon 1211 and 2.3 metric tonnes of halon 1301).

7. The licensing systems stipulated in Emergency Ordinance 195, Framework Law No. 137, Governmental Ordinance 89/1999, and Ministerial Order no. 88/2001 address the need for halons, labelling of halon containing equipment, and provisions regarding the use of available halon alternatives. All companies are obliged to report their data.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

8. UNIDO was asked about the need for further halon database updating given the fact that: a comprehensive survey had been conducted; the baseline was 3.49 ODP tonnes; only four users have been identified with ongoing needs; and all halon users are required by the ODS regulation to report their consumption. UNIDO indicated that while the National Ozone Unit (NOU) had an effective instrument to control halon import and consumption through the ODS import quota and licensing systems, a detailed halon inventory had not been established. Moreover, a two-month survey was insufficient to identify all halon users and regulatory updates were needed according to UNIDO.

9. The Ministry of National Defence has purchased halon recovery and recycling equipment for which installation and training are pending, and which is to be operated by Bucharest Mechanical Plant. Although no equipment is being requested in the proposal, the proposal indicated that the project would include technical assistance on sustaining the operation of the halon recovery and recycling equipment that is not purchased through the project. Decision 44/8 requires the development during project preparation of a clear understanding and agreement about the use of the recovery and recycling equipment, including processing fees and transport and storage costs, the coverage of deficits, if any, as well as the lifting of any impediments to trade in recovered and recycled halons from the region if such restrictions existed.

10. The halon management plan does not address the sustainability of the halon recovery and recycling (R&R) equipment that is related to the project but not funded by it. Therefore UNIDO was asked to provide a business plan for the sustainability of the halon management plan, or to inform the Secretariat if such a business plan had been considered for the external R&R component and whether the equipment was sustainable. The Secretariat also requested information about any income, co-financing and sustainability after the 2010 phase-out.

11. UNIDO indicated that decision 44/8 (f) was not relevant as the proposal does not envisage Romania's participation in the halon regional projects. UNIDO indicated that the Ministry of National Defence procured the equipment and therefore would be responsible for it. UNIDO was unaware of any estimates of facility's operating, halon transportation costs or other expenses related to sustainable implementation of halon banking operation. UNIDO believed that the location of the equipment within a public entity would create a good opportunity to utilize the commercial aspects of the halon banking operation.

12. The existing legislation/regulations requiring import controls/bans does not include provisions for the allowance of recycled and/or reclaimed halons as required by decision 44/8(b). UNIDO indicated that the upgrading of the regulations envisaged in the project would address this matter. It also confirmed that the proposal was prepared on the mutual UNIDO/NOU understanding that no further funding would be requested for the halon sector after the approval of this project.

RECOMMENDATIONS

13. The project is recommended for blanket approval at the level of funding, including agency support costs of 9 per cent, indicated in the table below with the understanding that no further funding would be requested for the halon sector after the approval of this project:

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Halon management programme	35,000	3,150	UNIDO

PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECTS
ROMANIA

PROJECT TITLES	BILATERAL/IMPLEMENTING AGENCY
(a) Terminal phase-out management plan of CTC production/consumption for process agent uses	UNIDO

NATIONAL CO-ORDINATING AGENCY	Ministry of Agriculture, Forestry, Waters and Environment

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2004, AS OF SEPTEMBER 2006)

Annex B, Group II, CTC	176.58		

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2004, AS OF SEPTEMBER 2006)

ODS Name	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity.
CTC	Process agent: 157.3			

CFC consumption remaining eligible for funding (ODP tonnes)	

CURRENT YEAR BUSINESS PLAN ALLOCATIONS		Funding US $ million	Phase-out ODP tonnes
	(a)	1,613,000	200.0

PROJECT TITLE:	**(a)**
ODS use at enterprise (ODP tonnes):	120.45
ODS to be phased out (ODP tonnes):	120.45
ODS to be phased in (ODP tonnes):	0
Project duration (months):	12
Initial amount requested (US $):	
Final project cost:	
Incremental Capital Cost (US $)	1,218,000
Contingency (10%) (US $)	111,800
Incremental Operating Cost (US $)	60,000
Total Project Cost (US $)	1,389,800
Local ownership (%):	100 %
Export component (%):	0 %
Requested grant (US $):	1,389,800
Cost-effectiveness (US $/kg):	10.21
Implementing agency support cost (US $):	104,235
Total cost of project to Multilateral Fund (US $):	1,494,035
Status of counterpart funding (Y/N):	Y
Project monitoring milestones included (Y/N):	Y

SECRETARIAT'S RECOMMENDATION	Individual consideration

PROJECT DESCRIPTION

14. On behalf of the Government of Romania, UNIDO has submitted a project entitled "Terminal phase-out management plan of CTC production/consumption for process agent uses" to phase-out the co-production and use of CTC as a process agent in the manufacture of di(ethylhexyl)-peroxydicarbonate (DEHPC), an intermediate chemical used in the manufacture of polyvinyl chloride (PVC) at Oltchim S.A. Funding of US $1,389,800 is requested, plus support costs of US $104,235 for UNIDO. The project will phase-out the last remaining co-production and use of CTC as a process agent in Romania.

Background

15. The enterprise produces the CTC it needs as a by-product in the production of perchloroethylene (PER), a common non-ozone-depleting solvent. The CTC co-produced is used entirely as a process agent in the DEHPC production facility. The level of CTC co-production in 2005 was 253 ODP tonnes of which 120.45 ODP tonnes were consumed in the DEHPC plant and the balance added to a stockpile for later use in the same process. UNIDO provided complete CTC production and stockpile quantities for the last ten years.

16. The enterprise plans to phase-out the co-production of CTC by implementing a proprietary process that will enable continued production of PER with CTC levels sufficiently low that the small amount produced can be fed back into the process. The first submission from UNIDO sought funding for this conversion. This request however was withdrawn following advice from the Fund Secretariat that Romania's production sector Agreement precluded further support from the Multilateral Fund for the phase-out of the production or co-production of CTC.

17. The enterprise also used to consume CTC as a process agent in the production of the herbicide 2,4-D. Production of 2,4-D was discontinued in 2003. The first submission from UNIDO sought compensation for closure of this production line. This request was also withdrawn. As quoted in the project document, the production facilities were closed because they were more than 30 years old, needed serious reconstruction and were not big enough to be economically compared with other producers.

18. The project indicates the pattern of CTC production and consumption for process agent use from 2005 until 2008 when the level of production will be zero. The proposed levels are indicated in the table below:

ODP tonnes	2005	2006	2007	2008
CTC production for PA use	253	121	187	0
CTC PA consumption	120.45	121	187	0

The project

19. Consequent to the above, the operative part of this project submission is a proposal to implement a revised process for the production of DEHPC that does not required the use of CTC. For the two stages of DEHPC production, the phase-out will be accomplished by employing

alternative technology in the first stage that does not require a process agent and by changing the process agent in the second stage from CTC to the hydrocarbon isododecane.

20. In the first stage, the quantities of chemicals to be processed decrease because of the absence of the process agent. The temperatures and pressures at which the chemical reactions take place also change. These changed conditions require that some of the main components of the production line including the main reaction vessel, be replaced. However, the design has been chosen to maximise the use of other pieces of production equipment. The cost of the main equipment items for the first stage is US $515,000.

21. In the second stage, the current "batch" process in which a fixed quantity of chemicals is processed in equipment of a certain size is to be replaced by a "continuous" process in which much smaller quantities of chemicals pass continuously through the production equipment under computer control. The continuous process is to be adopted on safety grounds in view of the increased fire hazard associated with the use of isododecane. The continuous process will also require the introduction of new process equipment. The cost of the equipment needed is US $245,000. The computer control system for the continuous process will cost US $64,000.

22. As well as major items of process equipment, conversion of any chemical process requires civil works and the provision of pipes, valves and electrical cables. The estimate for this equipment is US $228,000. An itemised list appears in the project document.

23. Incremental operating costs of US $60,000 for one year have been requested on the basis that the alternative solvent, isododecane, is approximately double the cost of CTC and electricity costs are higher to provide additional cooling for the second stage of the process. The project also makes provision for management and monitoring of the overall industrial rationalisation proposed in the submission and for imposition of quotas on current CTC production for process agent (PA) purposes for the two years until the project is completed. Costs of US $100,000 are proposed for these activities.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

24. Following clarification between UNIDO and the Fund Secretariat that additional funding for CTC production phase-out in Romania was not eligible for funding and that compensation would not be sought for the closure in 2003 of the production line producing 2,4-D, the Fund Secretariat's review concentrated on establishing the incremental costs of the sub-project to phase-out CTC used in the production of DEHPC.

25. This is a new and highly specialised application. The Fund Secretariat obtained advice from an expert in process engineering, who confirmed that the process had a sound technical basis and that in general the equipment requested was essential for the conversion and did not constitute a technological upgrade. The Fund Secretariat then discussed a number of details of the requested costs including costs for testing and pilot production, the costs of the major reaction vessels, the baseline safety equipment currently available in the plant and the costs for ancilliary equipment and civil works and installation. On this basis a number of adjustments were made to the levels of capital costs requested. The incremental operating costs of

US $60,000 for one year were confirmed as requested, mainly on the basis of the additional cost of buying in the new solvent, compared to the availability and cost of the CTC co-produced in the plant.

26. The final cost of the DEHPC sub-project is US $1,289,800. This amounts to a cost effectiveness of US $10.7/kg, which is at the high end, but within the range of cost-effectiveness levels experienced in approved process agent projects.

27. While no costs were finally requested for the CTC production phase-out, management and monitoring costs of US $100,000 were requested, since this represented the final phase-out of CTC production and use in Romania (process agent use is the only remaining activity). These costs remain in the project as recommended for approval to enable the Government of Romania to ensure that mechanisms are in place to monitor the achievement and maintenance of zero emissions and zero co-production.

28. Incremental costs of the project have been agreed between UNIDO and the Fund Secretariat. The project is being recommended for individual consideration in view of the linkage with the production sector Agreement for Romania as indicated below.

Controlled uses and the agreement for the production sector

29. The production of CTC for process agent purposes was not included in Romania's Article 7 data for 2004 (Romania's Article 7 data for 2005 had not been recorded by the Ozone Secretariat as having been reported as of the time of preparation of this document). At that time, the manufacture of DEHPC, for which the CTC was produced, was not an approved process agent application and the CTC production for this purpose was considered as feedstock. Approval of this application was forthcoming at the 17th Meeting of the Parties in December 2005 by means of decision XVII/6, under which the DEHPC process was included in the amended Table A to decision X/14.

30. Under the Agreement for the production sector, Romania agreed to limit its production of CTC for controlled uses to 170 ODP tonnes in each of the years 2005-2007, after which the level will be zero. Since the Agreement was entered into prior to the inclusion of DEHPC production as a process agent application, the quantities of CTC produced for this use (253 ODP tonnes in 2005) were not included in the quantities controlled under the agreement. However, with the inclusion of the application in decision XVII/6, the term "controlled use" will now include the CTC quantities produced for, and consumed in this application until such time as the Executive Committee has agreed that emissions have been reduced to levels that are "reasonably achievable" as per the provisions of decision X/14 of the Parties.

31. At the 48th Meeting, the Executive Committee approved the Agreement for phase II of the CTC sector plan for China. In that Agreement the Executive Committee decided that the current levels of CTC emissions – prior to implementation of the phase-out and emissions reductions measures under the project – constituted levels that could be reasonably achieved in a cost effective manner, as per decision X/14. It would be consistent with this approach if a similar position were taken in relation to the proposed levels of production and consumption of CTC by Oltchim in the years 2006 and 2007, prior to implementation of the project and complete phase-out of CTC. These are the levels specified in the table reproduced in paragraph 5 above.

RECOMMENDATION

32. The Fund Secretariat recommends that the Executive Committee consider:

(a) Approving the terminal phase-out management plan for CTC production/consumption for process agent uses in Romania at the cost indicated in the table below:

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Terminal phase-out management plan of CTC production/consumption for process agent uses	1,389,800	104,235	UNIDO

(b) Noting that the Government of Romania had agreed to limit its production and consumption of CTC for use as a process agent to the levels indicated in the table below:

ODP Tonnes	2006	2007	2008 and Onwards
CTC productionfor PA use	121	187	0
CTC PA consumption	121	187	0

(c) Requesting UNIDO to include in its verification report on the production sector to the second meeting of the Executive Committee in 2007, 2008 and 2009, information about the levels of production and consumption of CTC for process agent applications in Romania containing independently audited confirmation of their consistency with the limits indicated in the above table; and

(d) Requesting the Chair of the Executive Committee to write a letter to the Parties, through the Ozone Secretariat, stating that for the purposes of decision X/14(3)(b) of the Tenth Meeting of the Parties, the Executive Committee agreed that the emission levels of CTC from the process agent use set out in the above table met the criterion of being reasonably achievable in a cost-effective manner without undue abandonment of infrastructure. The letter should also state that the Executive Committee would report to the Parties in the years 2007 to 2009 in accordance with decision X/14(3)(b), on whether Romania had met the agreed emission reduction targets.

SECTOR PLAN FOR PRODUCTION SECTOR (SECOND TRANCHE)

I. INTRODUCTION

33. UNIDO is submitting to the 50th Meeting of the Executive Committee the request, on behalf of the Government of Romania, for the approval of US $900,000 plus US $67,500 as support cost for the implementation of the 2006 annual work programme of the Agreement for the Romanian ODS production sector. The submission from UNIDO includes the 2006 annual work programme, the verification reports on the permanent closure and dismantling of the CFC production plant, the 2005 CTC production at Plant Oltchim, the 2005 CTC production at Plant Chimcomplex, and 2005 methyl bromide production at Plant Oradea. The work programme and the verification reports are not attached for reasons of economy but could be made available upon request.

II. BACKGROUND

34. At its 47th Meeting in 2005, the Executive Committee approved the Agreement for the Romanian ODS production sector at an approved-in-principle funding level of US $6.3 million. This would provide for the total permanent closure of all the production capacity and, where applicable, the co-production of the controlled substances in Group I Annex A and Group I Annex B (CFCs), Group II (carbon tetrachloride) and Group I Annex E (methyl bromide), dismantling of methyl bromide and CFC production facilities and/or development of capacity to produce alternatives to these ODSs.

35. The agreed level of funding would be paid according to the following schedule upon the submission by UNIDO and the approval by the Executive Committee of the independent verification report on the completion of agreed production decreases for the preceding year.

Table 1

Production reduction targets and schedule of disbursement

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Max. annual allowable production of CTC for controlled uses* (ODP tonnes)	170.0	170.0	170.0	0.0	0.0	0.0						
Max. annual allowable production of methyl bromide (ODP tonnes)	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Max. annual allowable production of TCA (ODP tonnes)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL MLF Grant (US $'000)	3,440	968	1,075	1,290	0	0	0	0	0	0	0	6,773
Project cost (US $'000)	3,200	900	1,000	1,200	0	0	0	0	0	0	0	6,300
Agency fees (US $'000)	240	67.5	75	90	0	0	0	0	0	0	0	472.5

* - except for the uses exempted by a Decision of the Parties to Montreal Protocol

ODS producing plants and production in Romania

36. There are four plants producing CFCs, CTC, TCA and methyl bromide in the country, of which the CFC plant and the TCA production unit have been shut down and the two CTC production units and the methyl bromide plant are still active. The following table provides a profile of these producers as at the end of 2005.

Table 2

Name	ODS product	Nominal annual capacity	Plant history	Status
BICAPA TARNAVENI S.A.	CFC-11 CFC-12	4,750 MT (total) (CFC-12: 3,900 MT CFC-11: 850 MT)	Commissioned in 1989	Zero production. Closed in 1995
OLTCHIM S.A.	CTC	26,000 MT	Commissioned in 1974, revamped in 1992	Active
	TCA	2,800 MT	TCA Plant dismantled	Dismantled
CHIMCOMPLEX BORZESTI S.A.	CTC mixture	300–320 MT as mixture with chloroform	Commissioned in 1960	Active
SINTEZA S.A.	Methyl bromide	150 MT	Fist line commissioned in 1973, second line commissioned in 1997	Active. Closure planned for 2006

III PROJECT DESCRIPTION

Verification of the dismantling of the CFC plant and 2005 production of CTC and methyl bromide

37. The verification was carried out in August 2006 by an Indian consulting firm, Ess Jay Consultants, which had been contracted by UNIDO for carrying out the verifications of the Mexican CFC plant. The team which consisted of a technical consultant and an accountant followed the same methodology in auditing the four plants, described as follows:

(a) The plants completed the Questionnaire prepared by Ess Jay Consultants for data collection and returned it to the auditors prior to the site inspection;

(b) During the site visit, the enterprise made available to the team of auditors the services of required managers and experts who answered all queries in an open and professional way. Access was provided to all premises of the Plant and to all documents, daily production logs, sales and financial records requested by the auditors for the purpose of the audit and validation of the data provided in the completed Questionnaire;

(c) A tour of the Plant was done to clearly understand the operations and record keeping. The system of measurement for raw material receipts and issues, production, sales and closing stock was reviewed; and

(d) The following operational and statutory records for the year 2005 were examined:

(i) Raw material purchase and issue records;

(ii) Daily production logs and production records;

(iii) Inventory level records;

(iv) Process parameters records;

(v) Stock register in value as per books of accounts for the year 2004 and 2005 to check the opening stock and also audited balance sheet for the year 2004 and 2005 for cross checking;

(vi) Stock transfer documents; and

(vii) Monthly value added tax (VAT) returns filed with revenue authority for claim of VAT, which gives the monthly purchase of raw materials and sales of finished goods.

Findings and conclusions at Bicapa, the CFC plant

38. The Bicapa plant stopped CFC production in 1995. The auditors reported that the plant, including the anhydrous hydrogen fluoride (AHF) unit, had been demolished as of April 2006 by the plant engineering team under contract. The UNIDO submission included photos of the plant before and after the demolition.

Findings and conclusions at Chimcomplex, the CTC plant

39. Chimcomplex is a diversified company which produces a variety of chemicals including caustic soda, chlorine and agrochemicals. The chloromethane plant was started in 1965 under license from the former USSR, and was primarily producing methylene chloride in a continuous process by reacting chlorine and methane gas. However the residue from the process was a mixture of chloroform and CTC which had to be separated in a batch operation. The residue contained about 30-40 per cent of CTC and the balance was a mixture of chloroform and chlorinated hydrocarbons.

40. To verify CTC production, the team determined that there was a production of 88 MT of mixture containing CTC during 2005 which was stored in two wagons. To determine the approximate content of CTC in the mixture, one wagon with 49 MT of mixture was analysed in the laboratory and found the CTC content to be 32.65 per cent (16 MT). The plant separately analysed the second wagon containing the balance of 39 MT of CTC mixture. CTC was reported at 31.07 per cent (12.09 MT). Thus the total quantity of CTC produced in 2005 was 28.09 MT (16+12.09) in the 88 MT mixture containing CTC produced in 2005.

41. There was no sale of CTC in 2005 and historical records of accounts showed that the sale price was low because it was an impure mixture of components and could not command the same price as a commercial grade product.

42. The auditors found the record keeping and accounting of the company was not up to international standards, for instance the content of CTC was not accurately determined and recorded and the data available only provided a range. The auditors recommended that a procedure be established to improve the method of estimating the content of CTC in the mixtures stored in the wagons. The auditors also discovered from the records that 10 MT of CTC had been produced in December 2005. Although in the financial records it was accounted for in the May 2006 production, the management could not justify how this happened. The auditors recommended that there was a need to introduce some reconciliation procedure between storage and financial records.

43. The auditors concluded that Chimcomplex had produced a total of 88 MT of mixture of CTC and chloroform in 2005, of which 28.09 MT was CTC. The closing stock of CTC/chloroform mixtures at the end of 2005 was 322.7 MT.

Findings and conclusions at Oltchim, the CTC plant

44. Oltchim produces CTC by reacting dichloropropane (DCP) and chlorine to form CTC and per-chloroethylene (PCE). The reaction is initiated with propylene, then removed and substituted with DCP. Oltchim produces both DCP and chlorine in-house. The company has significantly reduced the production of CTC from an average of 8,900 tonnes in 1998-2000, to 160 tonnes in 2004, and has shifted to the production of PCE. The company also produces diethylhexylperoxycarbonate (DEHPC) in which CTC is used a process agent.

45. Production levels were derived from observing the level of change in the tank, which was recorded as production for the shift. To validate CTC production, the production records for the month of October were taken as a sample to calculate the material balance of input and output for the CTC, PCE, DCP and HC1 products. The result of the exercise showed that a total of 230 MT of CTC was produced for the month. Verification of process parameters in the plant logbook was made to show that CTC production had been carried out only in October 2005 and a transfer of 9.2 MT of propylene was made for the production of CTC. This was verified from stock and financial records.

46. Production of CTC was cross-verified by the ratio of by-product HCl production, which was also generated in the production of PCE. Physical verification of CTC stock (136.75 tonnes) was done on 10 July and found to be matching with their records. Sample testing of CTC from the rail wagon was taken and testing was carried out at the laboratory.

47. The actual invoices raised in a month were accounted for as sales. Since no sales of CTC had been made and CTC was transferred as a process reagent, the auditors verified the CTC stock transfer for DEHPC production as per stock transfer records maintained by the company and found them to be in order. The CTC produced during the year was used only for production of DEHPC (internal use). No sales invoice was made for external sale.

48. The auditor concluded that the OLTCHIM plant in Romania produced 230 MT of CTC in 2005 and used 109.5 MT for the manufacture of DEHPC. The balance of CTC (213.69 MT including opening stock of 93.19 MT) was in stock at the plant.

49. The company had taken trials to produce zero CTC as final product and shown their desire to discontinue production of CTC as a final product. This was achieved through ratio

variation of flow of raw material and process parameters. The auditors obtained a written confirmation from the Director General of OLTCHIM that they had ceased production of CTC for controlled uses.

Findings and conclusions at Sinteza, the methyl bromide plant

50. Sinteza went into the production of methyl bromide in 1973 and reacted methanol and sodium bromide in the presence of sulphuric acid at 45°c to produce methyl bromide. It had two reactors, each with an annual capacity of 75 MT for a batch process. All raw materials were procured from outside. The plant had not been in operation since January 2005 and management of the plant formally declared cessation of methyl bromide production in 2006.

51. The auditors asked for all records pertaining to production and accounts. It was evident that the plant had not been in operation for a long time (18 months). Thus the records generally maintained by an operating plant were not available. Verification was done by selection of all invoices and verifying their accounts in the sales register and TVA returns. As the plant had ceased production of methyl bromide, the only material movement was sales return and reselling of 2,849 MT methyl bromide which had been returned by two customers. All sales invoices and the stock record showing "NIL" metric tonnes of closing stock were examined. The closing stock of raw materials and finished goods were computed and verified based on data given and verified as per the stock records and the audited balance sheet of the company as of 31 December 2005.

52. The results of this audit showed that the Sinteza S.A. plant in Romania did not produce any methyl bromide in the period January 2005 to December 2005. The auditors obtained a written confirmation from the Director General of Sinteza S.A. that they had ceased production of methyl bromide.

Proposed 2006 annual work programme

53. The proposed 2006 annual work programme consists of two parts: part one on the progress achieved in the implementation of the 2005 annual work programme, and part two on the plan of action in 2006.

54. With regard to the targets in 2005, UNIDO reports that with a total production of 258 MT (283.90 ODP tonnes) of CTC, of which 109.5 MT (120.5 ODP tonnes) was used for the production of DEHPC in 2005 as verified by the auditors, the CTC production for controlled use in Romania was 148.5 MT (163.4 ODP tonnes) in 2005.

55. On policy measures undertaken, UNIDO reports the introduction by the Government of a production quota system in 2005-2006 and on-going work on finalization and enactment of regulations for control and ban of production and import of ODSs as of 1 January 2007.

56. On phase-out measures undertaken by the industry in 2005, UNIDO's submission reports the following:

(a) Bicapa is ensuring complete disposal of the CFC plant, which will be implemented in three steps, namely (i) dismantling the production facility; (ii) demolishing the building of the plants; and (iii) ecological treatment of the

land (simple neutralization of the soil contaminated with residual acids). The first step of the execution had already been completed and both of the CFC plants manufacturing AHF were already dismantled as of December 2005.

(b) Oltchim has modified the process of CTC/PCE production from 2005 to produce only PCE, and the related technology was filed in the Romanian Patent Office in 2003.

(c) Chimcomplex plans to modify the process of chloromethane production, which produces CTC as by-product of chlorinated methanes from 2006. The enterprise intends to convert the current methane route for the production of chlorinated methane (main products, methylene chloride, chloroform) to a methanol route to reduce the level of CTC co-produced. At the same time, the enterprise is working on installing an incinerator for CTC waste stored in a mixture with chlorinated methanes. According to the local regulation, the CTC containing substances are not allowed to be emitted to the atmosphere, and it is stocked in either railway wagons (eight wagons in total each with a capacity of 60 MT) or a 300 MT storage tank for the material returned from users. In total, more than 600 MT of a mixture containing 30 per cent of CTC is stored at the site.

(d) Sinteza is in the process of dismantling the whole production facility by the end of 2006. An application to dismantle the plant was submitted to the county environment office for approval.

57. The submission reports the following disbursement from the funds approved at the 47th Meeting.

Table 3

Fund disbursement,	**Approved fund US $ '000**	**Expenditure US $ '000**
Total Funding from MLF	3,200	3,005 (93.9 %)
Compensation of Profit forgone for Oltchim, CTC producer		2,000
Compensation of Profit forgone for Sinteza, methyl bromide producer		450
Technical Assistance for Chimcomplex, CTC producer		400
Technical Assistance for Bicapa, CFC producer		200
Technical assistance for the Government on policy, monitoring, awareness and others		Contract with the NOU under negotiation
Consultancy cost (including verification)		35

58. With regard to the work programme of 2006, UNIDO's submission proposes the annual targets as shown in the following table.

Table 4

ODS	2006 Target (ODP tonnes)
CFC	0
CTC	170
Methyl bromide	0
TCA	0

59. In terms of activities to be implemented by the industries, the following are proposed:

(a) Bicapa to execute the complete disposal of the CFC plant;

(b) Oltchim to reduce CTC production only for process agent uses in line with the country's CTC emission reduction scheme from process agent uses;

(c) Chimcomplex to commence preparation to modify the process of chloromethane production; and

(d) Sinteza to conduct dismantling of the facility.

60. The Ministry of Environment and Water Management continues to be responsible for monitoring and managing the phase-out programme. The National Ozone Unit is to conduct the supervision of enterprises and verification of ODS production and phase-out activities. The existing policies will continue to be implemented while work continues to finalize regulations for the control and ban of production and import of ODSs as of 1 January 2007. A technical assistance programme which began in 2005 will continue in 2006 and includes a number of activities, covering public awareness, training, market survey of remaining demand of ODS, and an information system on ODS production, consumption and exports.

61. The US $900,000 requested for 2006 is planned for the following activities with the proposed expenditure for each item.

Table 5

Activity	Budget US $ '000
Total Funding from MLF	900
Compensation of Profit forgone for Oltchim, CTC producer	300
Compensation of Profit forgone for Sinteza, methyl bromide producer	150
Technical Assistance for Chimcomplex	150
Technical Assistance for Bicapa, CFC producer	100
Technical assistance for the Government on policy, monitoring, awareness and others	150
Consultancy (including verification)	50

IV. SECRETARIAT'S COMMENTS AND RECOMMENDATION

Comments

The verification report of 2005 production

62. The verification report submitted by UNIDO follows the guidelines and standard format for verification of ODS production phase-out approved at the 32nd Meeting of the Executive Committee. The team which carried out the verification is known for their experience in conducting similar exercises for UNIDO in Mexico.

63. The report and the evidence presented by the auditors on the dismantling and demolition of the CFC plant at Bicapa indicate that the unit will disappear completely and will not have any real chance of resuming CFC production which ceased in 1995.

64. The auditors concluded that the Oltchim plant in Romania had produced 230 MT of CTC in 2005 and used 109.5 MT for manufacture of DEHPC. Since decision XVII/7 of the Seventeenth Meeting of the Parties, which classified the application of DEHPC as a controlled use was taken in November 2005 and Oltchim produced its CTC in October 2005 as confirmed by the auditors, it would appear that the 109.5 MT of CTC used for DEHPC by the company could be considered as a feedstock use and exempted as controlled use for the year 2005. This is a similar situation as the second phase of the China sector plan for CTC considered at the 48th Meeting in regard to decision XVII/8. As a result the production of CTC at Oltchim for controlled use in 2005 was 120.5 MT.

65. The Secretariat shares the concern expressed by the auditors over the build-up of over 600 MT of mixtures of CTC/chloroform in wagons and tanks at the site of Chimcomplex and the recommendation that the plant should seriously explore the need to incinerate the mixtures. Since the plant plans to continue with the production of chloromethane products by switching to a different route, it is important to implement the recommendations of the auditors for setting up a more accurate control system for production and finance in line with applicable international standards.

66. The results of the verification show that Romania produced zero metric tonnes of CFC, TCA and methyl bromide in 2005, and complied with the targets in the Agreement. Romania produced a total of 283.90 ODP tonnes (258.09 MT) of CTC in the two CTC plants in Oltchim and Chimcomplex in 2005, however 109.5 MT was used for the production of DEHPC, a non-controlled CTC application in 2005. As a result, the CTC production for controlled use in 2005 would appear to be 148.5 MT, or 163.5 ODP tonnes, which was lower than the target of 170 ODP tonnes set in the Agreement for 2005.

The 2006 annual work programme

67. The proposed targets for 2006 are consistent with those in the Agreement and the plan of action is commensurate with accomplishing these targets. It is particularly important to monitor the ongoing work on developing and enacting the regulations for the control and ban of production and imports of ODSs by 1 January 2007.

68. On the actions from industries, it would be worth monitoring the results of the upgrade of technologies by the two CTC producers in order to comply with the goal of the country to comply with the targets in the Agreement and the control measures of the Montreal Protocol.

RECOMMENDATION

69. The Secretariat recommends that the Executive Committee:

(a) Takes note of the verification report submitted by UNIDO;

(b) Requests the Government of Romania and the Plant Chimcomplex to consider, on an urgent basis, the disposal of the build-up of over 600 MT of mixtures of CTC/chloroform in wagons and tanks at the plant site, including the possibility of incinerating the mixtures;

(c) Requests the Plant Chimcomplex to implement the recommendations of the auditors for setting up a more accurate control system for record keeping of production and finance in line with applicable international standards; and

(d) Releases the second tranche of funding of US $900,000 for the implementation of the 2006 annual programme of the Agreement of Romania ODS production sector and US $67,500 as support cost to UNIDO, since the verification confirms that Romania met the targets of the Agreement in 2005.
