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STRATEGY PLAN OF ODS PHASE OUT FROM PRODUCTION OF EXTRUDED POLYETHYLENE AND POLYSTYRENE FOAMS SUB-SECTORS OF CHINA

This document consists of:

Part I: Comments by the Fund Secretariat

Part II: Strategy Plan of ODS Phase Out from production of extruded polyethylene and polystyrene foams sub-sectors of China; submitted by UNIDO on behalf of the government of China.

PART I

Background

1. In Decision 25/34, the Executive Committee requested the Government of China, in co-operation with the relevant implementing agencies, to prepare a sectoral strategy plan for the polyethylene/polystyrene foam sub-sector, and that approval of future projects in the sub-sector would be dependent on the preparation of such a plan.

2. UNIDO originally submitted to the Fund Secretariat a strategy for the entire foam sector in China. After discussions between the Fund Secretariat and the implementing agencies active in this sector in China, the strategy was revised to meet, precisely, the terms of the decision.

3. China's country programme, approved in 1993 estimated ODS consumption in the foam sector in 1991 to be 18,000 ODP tonnes (including foam in refrigerators) and growth in the sector to be 8 percent per year. Funding of projects in the foam sector commenced in China in 1992 and since then the Executive Committee has approved the allocation of almost US $52 million for the implementation of 95 investment projects in the foam sector, including group and umbrella projects, to phase out a total of some 10,000 ODP tonnes.

4. ODS consumption in China continued to grow throughout this period with the result that after taking into consideration consumption in projects approved but not yet implemented, the Government of China estimates in this strategy that an additional 16,987 ODP tonnes of annual consumption remains to be phased out in the overall foam sector in China.

Discussion

5. The document submitted by UNIDO is not a sector phase-out plan like the plan for the halon sector in China, in which a level of funding was agreed by the Executive Committee and the Government of China guaranteed to complete the phase out of halons in a specific time-frame. Rather, this strategy document provides an overview of the polyethylene/polystyrene (PE/PS) foam sub-sector in China, an indication of the project groups likely to be prepared and submitted for funding, the proposed timescale for phase-out activities and an explanation of the policy and institutional support measures proposed to be adopted. It is predicated upon the submission of group and umbrella projects.

Consumption

6. Figures for consumption in the sub-sector are presented for the various different project types and numbers of factories and production lines. A list of all the enterprises which have not yet been included in approved projects is appended. There is no explanation of the methodology used to establish and verify consumption at the enterprise level and to separate out capacity installed after July 1995. The figures for the numbers of enterprises making PE foam and their consumption do not seem consistent with the number and consumption of PE foam enterprises in approved and proposed projects.

Funding

7. The level of funding required if group and terminal umbrella projects are presented is not discussed explicitly. However it is stated that the average cost of conversion of enterprises is US $6 per kg. Investment projects approved for China in this sub-sector up to and including the 27th Meeting, have an average cost effectiveness of US $3.53 per kg.

Timeframe

8. In addition to the projects for individual enterprises, submitted up to the 22nd Meeting, the strategy envisages the remainder of the PE/PS sub-sector being addressed through three group projects and two terminal umbrella projects, one each for the polyethylene and polystyrene sub-sub-sectors. However it should be noted that the costs in the group projects submitted to date are simply the sum of the conversion costs of each individual enterprise in the group.

9. The first group project was submitted in 1998, and two have now been approved. A further group project has been submitted to the 28th Meeting (for individual consideration in the light of the Committee's consideration of this strategy paper). The last terminal umbrella project is proposed to be submitted in 2001. The proposed duration is not stated. The Executive Committee might consider whether two terminal umbrella projects in the same sub-sector, which include cost-effectiveness concessions, is consistent with Decision 19/32 according to which a terminal umbrella project can be submitted for the last project in a sector.

Technologies

10. There is no discussion on technologies. However projects so far approved in this sub-sector have all used hydrocarbons.

Industrial Rationalisation

11. Industrial rationalisation is discussed in Sections 3, 4 and 6. The discussion is centred on consolidation of production facilities through the relocation of production equipment. However there is no discussion on rationalisation of the capacity of the production facilities now in place in this sub-sector. The original strategy submitted by UNIDO indicated that the capacity of the sub-sector is some 12,000 ODP tonnes. The current production level is indicated in the strategy now presented as 50 percent of this figure, that is 6,000 tonnes per year. The Committee might consider whether compensation for phase out ought to be based on current levels of production rather than on the existing level of excess capacity.

Implementation

12. Considerable attention is paid in the general strategy to the problem of dealing with large numbers of small enterprises (Section 4). Industrial consolidation is proposed through the acquisition of smaller less capable enterprises and relocation of their capacity. A number of initiatives including mutual consolidation among enterprises and the use of equipment leasing are proposed. The importance of using larger enterprises to mobilise project management and supervision is stressed. However, given the apparent high level of excess capacity now present in the industry, there may be a need to consider whether some capacity ought to be retired in the

process of consolidation, in which case not all the present capacity would be converted with Multilateral Fund resources. Additionally, it is questionable whether the proposed relocation and retraining costs for the small enterprises are eligible for funding.

13. Group projects are proposed to be used for larger and more capable enterprises. Terminal umbrella projects are proposed to be used to achieve phase out in the smaller enterprises remaining after the larger group projects have been undertaken. The strategy recognises the need for more flexibility in the formulation and implementation of terminal umbrella projects. Not considered in the strategy is the Fund Secretariat's proposed new approach to SME project formulation approved by the Executive Committee in Decision 25/50 paragraph (d).

14. The proposed institutional and technical support measures are presented in Sections 8 to 11 of the document. They include production of product safety and quality standards, international exchanges for information gathering, a technical service centre and an information exchange centre. Not all proposed activities might be eligible for funding.

Implementation Guidelines

15. The background to the appendix: implementation guidelines for PE foam umbrella project, approved at the 25th Meeting, suggests that there will be great difficulty in implementing the project, *inter-alia* because of "the large amount of money cut by the Secretariat of the Executive Committee when examining the project". The review of the project (comprising 27 enterprises which were established during 1994-1995) was carried out to provide the necessary assurances to the Executive Committee that the funding recommended was, indeed, eligible for compensation and that the Committee was not being asked to approve funds that were not eligible for funding. National implementation was indicated as the preferred method of implementation in the project document and the level of incremental costs assessed as being eligible were discussed and agreed with the implementing agency, UNIDO, and confirmed as adequate by the national implementation agency during the review process.

PART II

STRATEGY PLAN OF ODS PHASE OUT FROM PRODUCTION OF EXTRUDED POLYETHYLENE AND POLYSTYRENE FOAMS SUB-SECTORS OF CHINA

SUBMITTED BY UNIDO
ON BEHALF OF THE GOVERNMENT OF CHINA

STRATEGY PLAN OF ODS PHASE OUT FROM PRODUCTION OF EXTRUDED POLYETHYLENE AND POLYSTYRENE FOAMS SUB-SECTORS OF CHINA

The strategy plan is prepared by the State Environmental Protection Administration in cooperation with the State Light Industry Bureau as well as with the relevant implementing agencies in accordance with the decision of 25/34 of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol.

1. Background

The Chinese government approved the "China Country Program for Phase out of Ozone Depleting Substances (ODS)" in 1993, which marked the beginning of our government's action on phasing out ODS by using the grants from the Multilateral Fund. The Country Program is now under updating and will be finalized soon. By the end of 1998, MLF had approved 71 projects with a reduction of 8,803.5 tons ODP. On the other hand, as a result of rapid development of foam sector in recent years, the number of enterprises and the output of products have increased substantially.

The consumption data in foam sector was reviewed and the updated data are indicated in the table 1.

Table-1

CFCs	1997 Consumption[1]	Phase out target of approved projects[2]	Project impact by the end of 1996[3]	Net ODS consumption left in the foam sector[4]
CFC-12	6,661	4,376	1,800	4,085.5
CFC-11	17,303	5,434.7	1,034	12,902.3
	23,964	9,810.7	2,834	16,987.3

1 Data collected from Country Programme Update (23,964) has already included project impact of 2,834 tons);
2 Data collected from projects up to 27th ExCom;
3 Data collected from projects claimed completed by Government;
4 Net consumption of ODS for new MLF projects = 23,964-(9,810.7-2,834).

The ownership of foam enterprises is becoming increasingly complex. Village and township enterprises and microbusinesses have increased in numbers and the sector shows the following characteristics:

- The enterprises are huge in number, small in scale and scattered in distribution. The consumption of ODS is huge but the average consumption of ODS per individual enterprise is low.
- Because of high competition of the market, some of the factories stopped producing or producing part of products, some of these reopen when the need of market goes up.

In order to achieve the goal of completely phase-out of CFC by 2010, concerning the characteristics of enterprises and difference of sub-sector, the ODS of the sector can be phased out in the light of umbrella project, terminal umbrella project and sectoral plan. In addition, the phase out of ODS should plan and manage in a comprehensive manner and combine CFC phase-out with restructuring within the sector and policy measures. As a result, the efficiency of the utilization of fund can be raised and the progress of CFC phase out can be more foreseeable and more operable.

For the above purposes, the ODS Project Management Office (PMO) of SEPA and China Plastics Industry Association have jointly established a specialized working group of foam umbrella project. Under the guidance of PMO, the specialized working group is responsible for making unified arrangement, managing, coordinating and supervising the implementation of umbrella projects in foam sector.

2. Analysis of current status of PE/PS foams sub-sector

The sector includes PS extruded foam sheet production, PE foam net bags, PE sheet, pipes and sticks with total 200 enterprises established before July 1995. PS extruded foams are produced by 90 factories with total 100 production lines consuming 3,600 tons of CFC-12 in 1996. PE extruded foam net bags are produced by 100 factories with 176 lines consuming 2,000 tons of CFC-12 and 40 factories produce PE extruded foam sheets and pipes with 50 production lines consuming 400 tons of CFC-12 .

Among these enterprises there are 55 EPS factories with 82 production lines consuming 2,850 tons of CFC-12 and 75 EPE factories with 130 production lines consuming 1,235 tons of CFC-12 which are not covered yet by the relevant projects and therefore included in the strategy plan for the period 1999-2002. The range of annual consumption of CFC-12 by the EPS producers is between 50 and 20 tons/line and between 25 and 5 tons/line by producers of EPE foams. The list of enterprises in both sub-sectors established before July 1995 and not covered yet by the projects is attached as annex 1.

The consolidated list of projects in EPE/EPS sub-sector and being implemented by the relevant agencies shown in the exhibit below including projects approved by the 27th ExCom.

World Bank			UNDP			UNIDO			Total		
No. of proj	Amount US$	ODS phase out, MT	No. of proj	Amount US$	ODS phase out, MT	No. of proj	Amount US$	ODS phase out, MT	No. of proj	Amount US$	ODS phase out, MT
6	2,962,200	1,460	19	7,284,747	1,770	1	4,488,516	1146	26	14,735,463	4,376

3. Strategy of ODS phase-out from the EPE/EPS sub-sectors

As for the EPE sub-sector is concerned, the strategy plan is foresee to address the sub-sector by three umbrella projects:

1998 - 1st project (approved in 1998 for 25 enterprises (46 extrusion lines), ODP 1,146 tons);

1999 - 2nd project (submitted for the 28th ExCom for 27 enterprises (47 extrusion lines), ODP 825.7 tons);

2000 - Terminal umbrella project for 48 enterprises (83 extrusion lines), ODP 409.3 tons.

For the EPS sub-sector the strategy plan is foresee to address the sub-sector by two umbrella projects:

2000 - Umbrella project for 35 enterprises (60 extrusion lines), ODP 2,100 tons;

2001 - Terminal umbrella project for 20 enterprises (22 extrusion lines), ODP 750 tons.

The 25th ExCom also recommended to SEPA and the implementing agencies to apply a concept of "industrial rationalization" when formulating and implementing the umbrella projects for the SME sub-sectors. The subject was thoroughly investigated in light of general possible technical, commercial and social advantages/disadvantages of such process as well as based on the initial experience in implementation of the first project for China. The issue is described in the above mentioned Strategy Plan. In general, the "industrial rationalization" in the SME sector might be implemented in the following ways:

1. Closure of enterprises (without relocation of production facilities)

Legal and financial compensation modalities of the owners and employees should be elaborated and approved by the ExCom.

2. Re-location of production facilities

a) costs of dis-assembling of equipment and utility systems, transportation to a new place etc. to be compensated;

b) methodology of cost estimation of relocated equipment and utility system to be elaborated;

c) the owners and employees to be compensated according to the local legislation.

3. Enlargement of enterprises

a) costs of civil/electrical/mechanical works, required for accommodation of the relocated equipment to be cooperated;

b) costs of installation and commissioning of the relocated equipment (associated with the process of retrofitting) to be compensated;

c) training costs of operational personnel to be compensated.

In any case, the concept of the extrusion line relocation and enlargement of factories has major advantages as follows:

a) Improved technical, operational and safety management;

b) Commercial, market and financial management capabilities are strengthened;

c) The overall conversion cost for a large group of factories will be cheaper due to obvious savings for the Multilateral Fund as well as for the country for safety systems, butane storage and pumping systems, etc.

4. General strategy for the phase out of ODP in foam sector

As described above, the foam sector is a typical small and medium enterprise (SME) sector. Considering the great number of enterprises which have different operation performance, financial capacity and marker situation, as well as nation-wide allocation at foam sector, special emphasis shall be given on those enterprises with low ODS consumption and partially in operation/shut down that have potential consumption trend and no bankruptcy. For new project, supervision and auditing on project implementation shall be strengthened and corresponding match-up policies be issued through governmental comprehensive planning and management. And the following new measures shall be taken with the aim to speed up project progress and to improve the cost effectiveness.

1. Purchasing small-size enterprises with poor management and low technical level by large (group) enterprises or forming share holding economic entity based on mutual consultation among enterprises and contracting through leasing instead of purchasing or setting up foam enterprises with equivalent capacity by reforming enterprises/phasing-out the equipment with low technical level and small capacity and by using new or retrofitted equipment are supported through making full of use of governmental regulation and grant fund on the condition of ensuring substitution effect as a prerequisite. By doing so, sector technical advancement and sector healthy development are promoted and product demand & supply situation be improved so that the waste of energy and vicious competition will be held back and the reforming enterprises will sustain stable and continuous development. Meanwhile, the involvement of large enterprises will mobilise the other enterprise's strength and reduce the difficulties on project management and supervision.

2. The target management and contracting system will be introduced and the competitive bidding will be used to select potential project enterprises by considering substitution quantity as target and plant retrofit result and fund input as criteria. At the same time, the focuses on the

following aspects shall be given, i.e. (1) promotion of nationalisation of substitution technology and realisation of sustainable development of substitution technology; (2) strengthening the implementation of match-up policies and supervision management; (3) carrying out training and education work on safety production; (4) promoting the application of new blowing agent substitute.

3. Because of large quantity of enterprises and the introduction of new implementation mode, the governmental department's regulation and co-ordination shall be brought into full role. The adoption of governmental implementation mode shall fully rely on local specialists in China in close collaboration with the international implementation agencies so that project is efficiently and quickly executed.

4. Therefore, this foam sector should be implemented by umbrella project modality to phase out ODP. This concept can be divided into two different groups as following:

(1) General umbrella projects: This group will be emphasize on bigger enterprises which have better organization and financial capacity

(2) Terminal umbrella projects: This group will cover all the remaining enterprises in the particular sector.

The above mentioned groups might be implemented through national execution as there will be a lot of consolidation and rationalization work of the enterprises. More flexibility in the project formulation and implementation is required for the latter group as terminal umbrella projects

5. Institutional Arrangement

Due to the above-mentioned specific features of foam sector operation, management and products marketing as well as specific need for the conversion, it was found necessary to strengthen the SEPA's capabilities to coordinate in formulation, implementation of relevant projects. For this purpose SEPA has prepared very well during the implementation of the "Institutional Strengthening" project as specified in the attachment - "Implementation Guidelines for PE Foam Umbrella Project in China ".

6. Industrial Rationalization

The initial experiences accumulated by SEPA and UNIDO in implementation of the first umbrella project in the sub-sector of extruded PE packaging foams show that in order to achieve the optimum conversion of enterprises and to ensure their safe and stable operation after conversion, it is absolutely necessary to reduce the number of small enterprises in the sub-sector through enlargement of the bigger enterprises. Using this proposal for industrial rationalization, a number of technical, safety related and commercial advantages will be achieve.

However, the small enterprises partially closed or transferred to the bigger enterprises should be motivated to minimize unavoidable negative social impact caused by this process of consolidation. For this purpose, the related expenses dealing in particularly with equipment dismantle, transportation, reinstallation, retraining of the operational and managerial staff of the closed enterprises, etc. have to be reflected in the project budget.

7. Establishment of a sector status research net, going into deep investigation.

In accordance with medium and long term planning, the Foam Specialized Working Group has well organized an investigation on the sector status in each sub-sector and regions. The detailed investigation will be conducted through the collaboration between the Specialized Working Group and relevant department of each province, autonomous region and municipality directly under the Central Government. The Specialized Working Group is responsible for collecting overall information, conveying timely the information to the departments concerned for their reference. The local department is aimed at collecting the information on plastic foam enterprises within its own area. Except for submission of the information collected, the local authority is also responsible for introducing the knowledge about ozone layer protection and CFCs substitution progress through various media.

8. Policy Measurements

1. Policy on Product Quality Management

A. Standard on PS Foam Product Using ODS Substitute as Foaming Agent" will be formulated at during period of 1999 and 2001.

B. "Standard on PE Foam Product Using ODS Substitute as Foaming Agent" will be formulated during period of 1999 and 2001.

C. "Standard on Rigid PU Foam Series Product Using ODS Substitute as Foaming Agent" will be formulated during the period of 2000 and 2002.

D. "Standard on flexible PU Foam Series Product Using ODS Substitute as Foaming Agent" will be formulated during the period of 2001and 2002.

2. Policy on Production Management:

A. "Safety Production Code on PS/PE Foam Production Using Flammable and Explosive Foaming Agent (Proposed)" will be formulated during period of 2000 and 2001.

B. "Safety Production Code on PU Rigid Foam (Proposed)" will be formulated during the period of 2001 and 2002.

C. "Safety Production Code on PU Flexible Foam (Proposed)" will be formulated during the period of 2000 and 2001."

9. International Exchange and Communication

- To obtain information about ODS substitute technology and experiences by means of attending international conference
- To organize domestic enterprises to visit enterprises of developed countries

10. Establishment of Technical Service Center for ODS Substitute Technology in Foam Sector

This center will be responsible for:

- Establishment of analysis system for raw material
- Establishment of monitoring system for products quality
- Establishment of pilot enterprises
- Organizing training in safety operating, monitoring and information obtaining
- Purchase of relevant equipment

11. Establishment of Information Center of ODS Substitute Technology in Plastic Sector

The center will responsible for:

- Establishment of database
- Organizing personnel training
- supply of consultant and guidance for the enterprises
- establishment of homepage at Internet
- conducting importance of ODS substitution to the public and running specialized periodical to introduce process and progress of ODS phasing out
- Purchase of equipment

12. Bans

- "Announcement about Prohibition of Newly Produced ODS Production Equipment and Newly Produced Equipment Using ODS" was released in 1997; and
- "Series Announcement on Prohibition of Using CFCs as Foam Agent in Production in Plastic foam Sector" will be released jointly with relevant line ministries during 2003 and 2007.

13. Cost related issues

- The estimated average cost of conversion of enterprises on the sector lever is 6 USD/Kg ODP. This refers to the "China Country Program for Phase out of Ozone Depleting Substance" under updating.
- Cost of projects preparation: 50,000 USD/1,000 tons.
- TA projects: this refers to Working Plan of Technical Assistance in Foam and Plastic Sector.

Enterprises List (PE Subsector)

	Enterprise	Number of Extrusion Lines		Enterprise	Number of Extrusion Lines
1	Shandong Xixia Plastics Foam Nets Plant	2	25	Longkou Tianjia Packaing Nets Plant	1
2	Shandong Tianyu Fruit Refrigeration Company	1	26	Shandong Jishu Packaging Nets Plant	1
3	Shandong Lifang Fruit Packaging Plant	2	27	Shandong Jiangjiagou Packaging Nets Plant	2
4	Shandong Sitong Packaging Nets Plant	1	28	Longkou Dayu Packaging Nets Plant	2
5	Shandong Xixia Rug Plant	1	29	Longkou Changfa Packaging Nets Plant	2
6	Plant	1	30	Longkou Baixing Packaging Nets Plant	2
7	Shandong Tongda Packaging Nets Plant	3	31	Plant	2
8	Shandong Hefengqiao Packaging Nets Plant	1	32	PuchengHongjin Packaging Nets Plant	1
9	Shandong Nongfa Packaging Nets Plant	1	33	PuchengJinguo Packaging Nets Plant	2
10	Shandong Xicheng Packaging Nets Plant	2	34	PuchengXingzhen Packaging Nets Plant	1
11	Shandong Liyuan Packaging Nets Plant	3	35	PuchengBaofeng Packaging Nets Plant	4
12	Shandong Yongxing Packaging Nets Plant	3	36	Pucheng Xingshen Packaging Nets Plant	1
13	Plant	1	37	Pucheng Guangda Packaging Nets Plant	3
14	Shandong Nantaigang Packaging Nets Plant	1	38	Pucheng Gongguo Packaging Nets Plant	1
15	Shandong Shewo Caiyin Packaging Nets Plant	1	39	Pucheng Xingquan Packaging Nets Plant	4
16	Shandong She'an Packaging Nets Plant	1	40	Pucheng Tongxing Packaging Nets Plant	1
17	Shandong Qushi Fruit Packaging Nets Plant	1	41	Pucheng Laosong Packaging Nets Plant	3
18	Shandong JingCheng Packaging Nets Plant	2	42	Pucheng Xinxing Packaging Nets Plant	4
19	Shandong Xinlong Packaging Nets Plant	1	43	Pucheng Fupingzhuang Packaging Nets Plant	1
20	Qingdao Lishida Plastics Co., Ltd.	2	44	Pucheng Xuezhen Packaging Nets Plant	2
21	Shandong Longkou Donglian Packaing Plant	1	45	Pucheng Jinyao Packaging Nets Plant	1
22	Longkou Fuyou Packaging Nets Plant	3	46	Pucheng Sufang Packaging Nets Plant	1
23	Longkou Shillang Gongxiashe Packaging Nets Plant	2	47	Pucheng Gaoxin Packaging Nets Plant	1
24	Longkou Changlunzhuang Packaging Nets Plant	1	48	Pucheng Beiguan Packaging Nets Plant	1

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Enterprises List (PE Subsector)

49	Shanxi PuchengHongtupo Packaging Nets Plant	1	63	Shanxi Hualong Packaging Nets Plan:	2
50	Shanxi Liquan Guangda Packaging Nets Plant	5	64	Shanxi Huacheng Packaging Nets Plant	2
51	ShanxiYulan Packaging Nets Plant	3	65	Shanxi Rongchang Packaging Nets Plant	2
52	Shanxi Baoxian Packaging Nets Plant	2	66	Shanxi Dahua Packaging Nets Plant	1
53	Shanxi Wanda Packaging Nets Plant	2	67	Shanxi Xingyuxing Packaging Nets Plant	2
54	Shanxi Sihai Packaging Nets Plant	2	68	Shanxi Chenzhong Packaging Nets Plant	1
55	Shanxi Xuehua Packaging Nets Plant	2	69	Shanxi Poli Packaging Nets Plant	1
56	Shanxi Shuangfa Packaging Nets Plant	2	70	Shanxi Paper Packaging Plant	2
57	Shanxi Lianfa Packaging Nets Plant	1	71	Shanxi Qian County Packaging Nets Plant	2
58	Shanxi Jianling Packaging Nets Plant	1	72	Sichuan Deyang Hede Plastics Factory	1
59	Shanxi Longda Packaging Nets Plant	2	73	Sichuan Mianyang Weipu Company	1
60	Shanxi Qianxing Packaging Nets Plant	2	74	Ltd	1
61	Shanxi Wenming Packaging Nets Plant	2	75	Plant	1
62	Shanxi Lantian Packaging Nets Plant	2		*Total Number of Extrusion Lines*	*130*

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Enterprises Lis ; Subsector)

1	Guangdong Shenzhen Defengsheng Co., Ltd.	29	Hangzhou Jinying Plastic Products Co., Ltd.
2	Guangdong Zhuhai Xinfuhua Fast Food Appliance Co., Ltd.	30	Hangzhou Kangda Plastic & Ruber
3	Guangdong Nanhai Haiyang Compound material Co., Ltd.	31	Anhui Wuhu Plastic Plant No.4
4	Guangdong Nanhai Boli	32	Wuhan Quanyang Plastic Products Co., Ltd.
5	Guangdong Fushan Wanda Plastic Products Industry Co.	33	Hunan Weiyang Plastic Packing Co., Ltd.
6	Guangdong Fushan Meihua	34	Beijing Changquan Packaging Instrument Co., Ltd
7	Guangdong Dongguan Yufeng	35	Beijing Yanshan Plastics Products Co., Ltd.
8	Guangdong Dongguan Yongsheng	36	Beijing Anshun Packaing Machinery Co., Ltd.
9	Guangdong Dongguan Wanlong	37	Langfang Guanglai Plastics Co., Ltd.
10	Guangdong Huizhou Huanmei	38	Beijing Zhengyao Plastics Packaging Co., Ltd.
11	Guangdong Guangzhou Jindongfang	39	Beijing Hongya Plastics Products Co., Ltd.
12	Guangdong Guangzhou Huahui	40	Tianjin Yuxin Plastics Packaging Co., Ltd.
13	Guangdong Shenzhen Yuanfengsheng	41	Shandong Yangxin Luhuan Degadation Plastics Co., Ltd.
14	Fujian Zhangzhou Baochang Plastic Products Co., Ltd.	42	Jinan Hongli Food Containers Co., Ltd.
15	Fujian Xiamen Anjin Houkeng PSP Sheet Products Plant	43	Qingdao Guanlai Plastics Co., Ltd
16	Fujian Xiamen Yanyuan Degradation Resin Co., Ltd.	44	Shijiazhang Ximing Disposal Food Containers Plant
17	Guangdong Shantou Baocheng Resin Co., Ltd.	45	Shijiazhuang Kuangkuai Fast Food Containers Plant
18	Guangxi Nanning Xinchang New Plastic Products Co., Ltd.	46	Taiyuan Plastics Plant
19	Shanghai Yifeng Plastic Packing Co., Ltd.	47	Bazhou Company
20	Shanghai Shangfu Plastic Products Co., Ltd.	48	Shenyang Shangwei Company
21	Central Chemical Co., Ltd.	49	Harbin Duona Company
22	Shanghai Yangji Plastic Products Co., Ltd.	50	Daqing Lindian Food Containers Plant
23	Shanghai Xinli Plastic Products Co., Ltd.	51	Harbin Quanxie Company
24	Jiangsu Kunshan Baoli Plastic Co., Ltd.	52	Liaoning Fuxin Degradation Resin Packaging Co., Ltd.
25	Nanjing Yue'an Plastic Enterprise Co., Ltd.	53	Chongqing Minghong Plastics Development Co., Ltd.
26	Nanjing Fast Food Appliance Plant	54	Chengdu Plastics Packaging Factory
27	Jiangsu Nantong Yuanfu Plastic Dinnerware Co.	55	Jinan Hongli Food Container Co, Ltd., Xi'an Branch
28	Zhejiang Taizhou Nenjiang Hongda Plastic Products Plant		*Total Number of Extrusion Lines:* 82

Implementation Guidelines for PE Foam Umbrella Project in China

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I.Background

I. China joined the Montreal Protocol on Ozone Depleting Substances in 1991, committing itself to phasing out ozone depleting substances (ODS) in China to the international community. China State Environmental Protection Administration (SEPA) is responsible for convention implementation. A Project Management Office (PMO) was set up within SEPA, responsible for selecting, preparing and submitting projects, and also responsible for coordinating, managing and supervising project implementation. The four international implementing agencies i.e. the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the United Nations Environmental Programme (UNEP) and the World Bank (WB) assist the Chinese government in examining projects approved by SEPA and submitting them to the Executive Committee of Multilateral Fund. Projects are formulated and implemented according to the procedures specified by the implementing agencies.

II. To accelerate ODS phaseout as well as to adapt to the situation that ODS consuming enterprises in foam sector are of small scale, large number and wide distribution, an umbrella project was submitted instead of many individual projects. As the result of negotiation with the China Plastic Industry association, PE foam net sub-sector was identified to demonstrate the submission and implementation of umbrella projects. 25 enterprises, including 46 production lines, formed one umbrella project. Prepared jointly by domestic and UNIDO experts, the project was approved by the 25th Meeting of the Executive Committee of Multilateral Fund in July 1998. The amount of funds approved for this project was 4,488,516 and 1,146 tons of ODS will be phased out.

III. There will be great difficulty in implementing the project because of the small scale, wide distribution, high safety risk and the large amount of money cut by the Secretariat of the Executive Committee when examining the project. To ensure the smooth implementation and completion of the project, it was decided by UNIDO and SEPA (PMO) that national execution will be the methodology of project implementation. Through its contract with SEPA, UNIDO entrusts SEPA to be responsible for the management of project execution.

II.General Principles

I. This guideline is especially formulated to guarantee the smooth implementation and completion of the project and achieve the preset targets.

II. The formulation of this guideline is based on the Agreement between UNIDO and SEPA. All articles of this guideline conform to the contents and articles of the Agreement.

III. This guideline is applicable to the above-said PE foam project.

IV. This guideline is applicable to all departments and enterprises involved in the project. All departments and enterprises shall fulfil their obligations prescribed by this guideline.

V. The purpose of this guideline is to ensure the project to be completed in accordance with the project document and within the budget line, while following the principles of the Montreal Protocol and Multilateral Fund, procedures of UNIDO and related regulations of our country. Therefore, all articles of this guideline serve this purpose.

III.Organizations

I. UNIDO

Refers to the international implementing agency of this project – United Nations Industrial Development Organization (UNIDO), including its Headquarters in Vienna and its Beijing Office.

II. SEPA-National Implementing Agency

Refers to the State Environmental Protection Administration (SEPA) and its Project Management Office (PMO).

III. Bank of Deposit

Selected by the PMO, the Bank of Deposit provides service for operating the project fund and also manages the account.

IV. CA

IS the Cooperating Agency. Here refer to the China National Chemical Construction Corporation (CNCCC).

V. Expert Group

Recruited by CA, experts provide consultation and other service for project execution.

VI. Bidding Company

Refers to the state bidding company appointed by SEPA. It is responsible for equipment procurement from abroad.

VII. Engineering Service Company

Refers to the design and Construction Company selected by SEPA and CA to provide services regarding design, installation, civil engineering and commissioning during the implementation of a specific sub-project.

VIII. Safety Support Organization

Refers to fire-fighting departments and research institutes responsible for providing consultation and services in terms of safety.

VIIII. beneficiaries

Refer to all enterprises in this project which are grant recipients.

IV.Responsibilities

I. UNIDO

1. As the international implementing agency, responsible for implementing project and communicating with and submitting progress report to the Executive Committee of the Multilateral Fund.
2. In accordance with the Agreement with SEPA, guarantee timely transfer of fund to the account of the identified bank of deposit. The fund refers to the project fund and the project management fee of 3% paid by UNIDO to SEPA according to the Agreement.
3. Provide necessary technical and policy support and technical, administrative service for project implementation.
4. Supervise, inspect and examine the implementation of the project.
5. Examine and review contracts submitted by CNCCC through SEPA.
6. Participate in the acceptance test organized by PMO.

II. SEPA/PMO

1. As the official representative of the Chinese government, SEPA is the executing organ of the project.
2. SEPA is responsible for coordinating the relations among all concerning parties, supervising the project implementation, and solving key problems encountered.
3. SEPA exerts administration over SWG and is responsible for providing SWG with necessary working conditions and professional guidance.
4. Examine key issues in project implementation, such as the implementation plan, management document, mode of bidding, reorganization of enterprises, and disbursement, etc.
5. Select a bank of deposit and sign an agreement with it, and open an account.
6. Make request to UNIDO for fund transfer after submitting process, conversion and finical reports required by the contract.
7. Authorize the bank of deposit to disburse funds to other national agency involved implementing project in accordance with regulations of the Government of China.
8. Authorize an audit institute to audit project activities.
   Organize project completion commissioning and sign on the agreement of ownership transfer, certify disposal of ODS equipment.

III. SEPA/SWG

SEPA will establish Specialized Working Group (SWG) especially for this responsible project management and implementation, SEPA/SWG will:

1. Coordinate relations between UNIDO and enterprises in accordance with contract requirement.
2. Examined by UNIDO and submit progress reports at least twice a year as required.
3. Organize technical and safety training for enterprises.
4. Assign CA.
5. Supervise the work of CA.
   a) Supervise CA's performance in project implementation and solve problems in time.
   b) Examine the plan on project implementation proposed by CA.
   c) Examine the bidding documents proposed by CA and bid evaluation report.
   d) Examine the disbursement request made by CA.
   e) Review the progress report submitted by CA.
6. Summarize and prepare project completion report including certification of disposal ODS equipment.
7. Provide the audit institute with necessary materials and assistance.

IV. Bank of Deposit

1. In accordance with the Agreement with SEPA/PMO, entrusted by SEPA/PMO, manage the project fund.
2. Receive and accept fund paid by UNIDO, including project fund and the project management fee of 3%.
3. Authorized by SEPA/PMO to disburse
4. Support audit of project.

V. CA

Is the cooperation implementing agency. Under the administration of SEPA/SWG, responsible for specific work related to project implementation to ensure the project completed in accordance with the project document. CA will assist SEPA to:

1. Formulate a project implementation plan according to the requirements of the project, and submit it to SEPA/SWG for approval.
2. Report technical, financial, procurement and management problems encountered and their solution to SEPA/SWG in time.
3. Prepare bidding documents based on the principal and comparative bidding and submit them to SEPA/SWG.
4. Participate and supervise the whole process of bidding, tendering and bid evaluation.
5. Supervise the work of experts, state tendering company and engineering service company.
6. Recruit experts to provide consultation and service.

7. Assign a company for international equipment procurement and sign a contract/ an agreement with it, and procure equipment.
8. Select an engineering service company on bidding basis.
9. Prepare quarterly project progress reports including financial reports and submit them to SEPA/SWG.
10. Support SEPA/SWG in examination conducted by UNIDO and the state audit institute.
11. Visit the beneficiaries regularly inspect the implementation of the project and ensure its completion.
12. In accordance with the progress and requirements of the project, make request to SWG for disbursement.

V. Expert Group

Recruited and entrusted by SEPA, provide technical consulting service for the whole process of project implementation and acceptance test, and review documents, the experts will assist SEPA to:

1. Formulate a technical plan for the project according to the project document.
2. Determine the list of equipment to be procured by international bidding and develop technical specifications with the cooperation of the beneficiary enterprises, as well as develop terms of reference for local works to be used as the bidding document for select an engineering service company.
3. Participate in evaluating bids and prepare a bid evaluation report.
4. Examine and approve the design of sub-projects made by the engineering service company.
5. Compile a Safety Regulation and Operation Manual of Butane Technology of PE Extruded Foam Net.
6. Inspect such conversion procedures as construction, installation and commissioning at any time necessary, and make sure the engineering service company complete the work on time and with satisfactory quality, and participate in acceptance test.
7. Training: In accordance with the requirement and arrangement of the project, train relevant staff about technical and safety regulations.
8. Make field trips to inspect the implementation of each sub-project. Review the completion report submitted by the engineering service company regarding each sub-project and make comments. On the basis of this, prepare Final Completion Report of Project and submit it to SEPA/SWG.

VII. State Bidding Company

Also refers to the organization responsible for equipment procurement.

1. Entrusted by SEPA, the bidding company will assist SEPA in procurement of equipment through bidding process.
2. Prepare bidding documents on the basis of the list of imported equipment and technical specifications developed by experts.
3. Go through formalities to obtain necessary documents for equipment import and duty exemption.

4. Issue bids, open bids and evaluate bids in cooperation with SEPA.
5. Prepare and sign contracts (including commercial articles, transportation articles, equipment installation and commissioning, etc.)
6. Deal with claims.
7. Supervise contract execution.

VIII. Engineering Service Company

The function of this company will be defined in the terms of references for providing design and construction services for sub-projects according to the Contract with SEPA. Its work also includes installation and commissioning of imported equipment.

VIIII. Safety Support Institute

1. Entrusted by SEPA, cooperate with the construction service company; make comments on and guarantee the safety design and construction.
2. Make suggestions and propose requirements on the fire-fighting safety of the project design.
3. Examine the design made by the engineering service company and make comments, and issue a permit of fire safety design and a construction certificate.
4. Examine the work of the engineering service company, make comments, and issue a fire safety certificate under the condition that the requirements are met.

X. beneficiary

1. Obtain project establishment approval from the local government in accordance with the procedures for domestic technical innovation project, including environmental impact assessment, etc.
2. Set up a project implementing office, designate a contact person, report to CA on the progress of the project regularly. The work of the office is subject to the supervision of SEPA.
3. Prepare a plan for restructuring the enterprise, provide all relevant drawings, equipment and materials in accordance with the scope of supply of engineering company and cooperate with experts to make an overall plan.
4. Provide assistance for field trips of financial and technical staff, and provide them with necessary materials.
5. Assist in innovation and financial operation, and facilitate the smooth implementation of the project.
6. Report to CA and SEPA/SWG on the problem encountered in implementation in time. When the project needs adjustments, application shall be made to SEPA to get SEPA approval.
7. Prepare completion reports of sub-projects.
8. Ensure that the CFC equipment are dismantled or properly disposed after the project is completed, and no ODS will be consumed.
9. Assist in project commissioning.

V Adjustment in Project Document

Beneficiary enterprises should send report and request to SEPA if there is any change different from the original project document and the overall design. It can only be implemented after approving by SEPA and UNIDO with consultation from the experts.

VI Commission Procedures

Commission of project conversion

After completing of local works and successful trial, enterprises should submit the commissioning document for international equipment. The engineering company should assist the enterprises in reporting and getting necessary commissioning document from local Environmental Protection Bureau, Fire-fighting Bureau and Labor and Public Health Bureau as well as other management departments concerned, and

Engineering Company prepares project completion document for each sub-project and request for commission to CA. CA will commission each project in accordance with engineering company complete commission for the whole umbrella project

CA organizes the experts to formulate final project completion report after inspecting and commissioning each sub-project. The final report will be sent to SEPA/SWG and UNIDO for review. After approval, PMO will jointly organize a complete project commission and sign the handover protocol afterwards.

VII Monitoring and Inspection

UNIDO may inspect and audit project executing activities and relevant documents when it find this necessary, SEPA will report to UNIDO on the project executing in accordance with reporting requirement defined in the contract between SEPA and UNIDO.

SEPA's inspection with CA

I. CA should submit quarterly project implementing report to SEPA/SWG, including financial part. SEPA/SWG will disburse relevant fund according to the project implementing status and expenditures occurred; and

ii. SEPA/SWG will conduct inspection on the project implementation when necessary and without notice in advance.

SEPA's inspection of local engineering company

Engineering company should provide CA with monthly project implementing report together with the financial part; and

CA will inspect the project implementation when necessary and without notice.