ENVIRONMENTAL MANAGEMENT FRAMEWORK

Foreign Economic Cooperation Office
The Ministry of Environmental Protection
November, 2011
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I. Introduction

1. At the 19th Meeting of the Parties to the Montreal Protocol on September 2007, the Parties agreed to accelerate HCFC phase-out. China, as Article 5 country, will freeze production and consumption of HCFC in 2013 and will reduce HCFC production and consumption by 10% in 2015, by 35% in 2020, by 67.5% in 2025 with a total phase-out in 2030, while allowing for servicing an annual average of 2.5 percent during the period 2030 to 2040.

2. The Executive Committee of the Multilateral Fund for the Implementation (ExCom) has approved to prepare the China’s HCFC Phase-out Management Plan (hereinafter referred to as HPMP) for production sector and PU foam sector. The World Bank was assigned as the international implementing agency at the 55th Meeting in July 2008 to assists Project Management Organization (hereinafter referred to as PMO) in China to phase out HCFC production in production sector and HCFC consumption in PU foam sectors in order to meet the 10% reduction target in 2015.

3. As the project has multiple subprojects and their locations of subprojects are not known at the time of the appraisal, an Environmental Management Framework (EMF) has been prepared by the PMO under assistance of its consultants. The Environmental Management Framework (EMF) will be used to provide guidance to both beneficiary enterprises and the PMO under the Ministry of Environmental Protection for the environmental management process and ensure the environmental management is in compliance with both Chinese environmental assessment (EA) laws and regulations and in accordance with World Bank EA policies and procedures as specified in OP/ BP 4.01 (Environmental Assessment). The EMF defines the contents, procedures and institutional responsibilities for environmental management of the sub-projects.\(^1\)

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\(^1\)“Sub-project” means HCFC phase-out activities covered in the signed HCFC phase-out contract between beneficiary enterprises and the PMO.
There are about 29 HCFC production enterprises with 36 production lines and 3,500 PU foam enterprises in China. About 130 foam enterprises and HCFC production enterprises may be involved in the ODS phase-out project during the first implementation period (2011-2015). The PMO engaged an investigation team to conduct site visits to 4 HCFC production enterprises and 9 foam enterprises. The survey results show that HCFC production enterprises proposed to decrease their production gradually without closure of their HCFC production facilities in the first implementation stage. Foam enterprises indicated they will convert to alternative technology at present location and few enterprises considered relocating their enterprises. Additionally, representatives of enterprises agreed that the HCFC phase-out will contribute to the ozone layers protection. However, sufficient technical and financial support is needed as well.

II. Project Description

The Multilateral Fund for the Implementation of the Montreal Protocol will provide financial and technical support to eligible enterprises in order to meet the objective of total phase-out of HCFC in production and consumption sectors and assist to find the alternatives to replace HCFC. Given there will be only 10% reduction of HCFC production and consumption during the first implementation period (2011-2015), the 1st phase Project will consist of the following six types of subprojects: (1) PU foam sector: □ Foam enterprises whose conversions to alternative technology (e.g hydrocarbon) take place at their present location (hereinafter referred to as conversion at present location); □ Foam enterprises whose conversions to alternative technology (e.g hydrocarbon) involve relocation of their facilities (hereinafter referred to as conversion at new location); □ Existing polyol system houses providing technical support on low GWP alternatives that may be flammable and provide the pre-blended ployol with hydrocarbon to small and medium foam enterprises (hereinafter referred to as system house conversion); □ Foam enterprises
engaging in identification and testing of potential substitutes; (2) HCFC production Sector:  □ HCFC production reduction; □ HCFC alternatives production- establishment of new facilities to produce alternative chemicals to HCFCs. This EMF will cover the 1st phase HCFC phase-out project (from 2011 to 2015).
III. Applicable Laws and Regulations

3.1 National Laws and Regulations

6 For the construction or other project in china, the national laws and regulations should be followed. The important national regulations include:

<table>
<thead>
<tr>
<th>National Laws and Regulations</th>
<th>Contents</th>
</tr>
</thead>
</table>
| Environmental Protection Law of the People’s Republic of China (1989) | Article 24
Units that cause environmental pollution and other public hazards shall incorporate environmental protection into their plans and establish a responsibility system for environmental protection, and must adopt effective measures to prevent and control the pollution and harms caused to the environment, i.e. waste gas, waste water, waste residues, dust, odor, radioactive substances, noise, vibration and electromagnetic radiation generated in the course of production, construction or other activities.
Article 25
For the technological upgrading, facilities and processes with high rate of the utilization of resources and a low rate of the discharge of pollutants shall be used, along with economical and rational technology for the comprehensive utilization of waste materials and the treatment of pollutants. |
| Law of the Peoples Republic of China on EIA 2002 | Article 16
On the basis of the extent of the effects exerted on the environment by construction projects, the State exercises in a classified manner control over the evaluation of the effects of construction projects on the environment.
A construction unit shall in accordance with the following provisions make arrangements for preparing a written report on the environmental impacts or a statement on such impacts or filling out a registration form of environmental effects hereinafter referred to as the document for evaluation of environmental effects in general where significant impact may be exerted on the environment, preparing a written report on environmental |
effects, in which a comprehensive evaluation of the effects on the environment shall be made.

2. where less significant impacts may be exerted on the environment, preparing a statement on the impacts, in which an analyses or special evaluation of the effects shall be made.

3. where the impacts on the environment are very little and therefore it is not necessary to make an evaluation of them, filling out a registration form of environmental impacts.

Article 22
The document for evaluation of the environmental impacts of a construction project shall, in accordance with the regulations of the State Council, be submitted by the construction unit for examination and approval to the competent administrative department for environment protection that has the power of examination and approval; where the construction project is subordinated to the competent department of its trade, the written report or the statement on its environmental impacts shall, after preliminary examination by the said department, be submitted for examination and approval to the competent administrative department for environment protection that has the power of examination and approval.

Article 24
Where, after the document for evaluation of the environmental impacts of a construction project is approved, major changes are made in the nature, scale and location of the construction project, in the production techniques adopted, or in the measures taken for prevention and control of pollution and for prevention of damage of the ecology, the construction unit shall submit a new document for evaluation of the environmental impacts of the construction project for examination and approval.

Regulations of the People’s Republic of China on the Administration of Construction Project Environmental Protection (1998)

Article 16
Simultaneous design, simultaneous construction and simultaneous going into operation with the main body project must be realized for matching environmental protection facilities construction which is required for the construction project.


Since alternative technology is introduced from abroad, Environmental Assessment (EA) contents should be simplified. There is no need to discuss with ozone impact. For most one production line renovation, EA table is needed. If there are inflammable materials involved, environmental risk assessment is necessary and emergency system and protection distance should be carried out during construction.
This regulation is applicable to the public participation of construction projects as below:  

(1) The unit of the construction project which may cause considerable impacts on the environment and for which a written report on environmental impacts is required to be prepared.  

(2) Where after the document for evaluation of the environmental impacts of a construction project is approved, major changes are made in the nature, scale and location of the construction project in the production techniques adopted or in the measures taken for prevention and control of pollution and for prevention of damage of the ecology, the construction unit shall submit a new document for evaluation of the environmental impacts of the construction project for examination and approval.  

(3) Where decision is made for starting construction of a project more than five years following the date the document for evaluation of the environmental impacts is approved, the said document shall be submitted to the original examination and approval department for examination and verification anew and Public Participation is needed.  

Other relative laws and regulations  
Regulations on the management of Ozone-Depleting Substance (ODS) (2010)  
Law of the Peoples Republic of China on the Prevention and Control of Atmospheric Pollution (2000 Revision)  
Law of the Peoples Republic of China on the Prevention and Control of Solid Waste Pollution (2004 Revision)  
Cleaner Production Promotion Law of the People's Republic of China (2002)  
Classified Catalogue for control over the evaluation of the environmental effects of construction projects (2008); Provincial and local implementation regulations. |
3.2 Word Bank Safeguard

OP 4.01 provides essential guidance on objectives and principles to applicable projects.

Table 3-2 Word Bank Safeguard Policy

<table>
<thead>
<tr>
<th>Word Bank Safeguard</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment (OP 4.01)</td>
<td>EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favors preventive measures over mitigatory or compensatory measures, whenever feasible.</td>
</tr>
<tr>
<td>Environmental, Health, and Safety (EHS) General Guidelines</td>
<td>The Environmental, Health, and Safety (EHS) Guidelines are technical reference. When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards.</td>
</tr>
</tbody>
</table>
IV. Flowchart and Institutional Responsibilities

4.1 Flowchart of Environment Management

Figure 4-1 Flowchart of Environment Management
4.2 Institutional Responsibilities

**Table 4-1 Institutional Responsibilities**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| PMO         | ➢ Sub-Project Preparation Phase: 1) to select the beneficiary enterprises with assistance from professional experts and industrial associations and identify the type of subproject and the requirements for environmental documents; 2) to review environmental documents submitted by sub-project owner; 3) to review the organizational capacity of the enterprises to effectively implement their Environmental Management Plan (EMP); 4) to ensure that appropriate clauses are included in enterprises contract obligating the enterprises to effectively implement the EMP and 5) to request subproject owner to prepare and submit environmental Due Diligence Report.  
➢ Sub-project Implementation Phase: 1) to lead the supervision of the compliance of beneficiary enterprises in EMPs implementation, under assistance of local EPBs and/or consultants; 1) Report the implementation of EMP to World Bank regularly. |
| Sub-project owner | ➢ Sub-Project Preparation Phase: Carry out the HCFC phase-out project planning, design and implementation and if necessary, prepare environmental documents (e.g. EA/EMP, due diligence report), public consultation and information disclosure.  
➢ Sub-project Implementation Phase: 1) Conduct the activities in accordance with approval environmental documents, and cooperate with project verification and monitoring; 2) ensure that relevant tender documents and contracts include requirements put forward in the EMP; 3) document monitoring results in accordance with the Monitoring Plan included in the EMP and identify any necessary corrective or preventive actions taken during the monitoring period, as well as the results/outcome of similar action that may have been taken in previous reporting period; 4) submit the progress report including implementation status of EMP to PMO and 5) obtain the approval of Local Fire-fighting Protection Bureau if substitute is flammable, and obtain the approval of relevant governmental agencies/institutions on workers’ occupation health, if requested by national regulations. |
| EA consulting firms or consultants | ➢ Preparing the documents of EIA and EMP entrusted by the sub-project owner.  
➢ Assisting the enterprises in EMP implementation. |
| Local Environmental Authorities | ➢ Sub-Project Preparation Phase: Environmental Impact Assessment (EIA) documents review and approval.  
➢ Sub-project Implementation Phase: 1) to supervise the compliance of beneficiary enterprises in EMPs implementation; 2) to confirm whether the projects followed the “3 simultaneous” regulation and environmental policies while sub-project owners install new facilities; 3) to work on other daily duties, such as work on prevention of the environmental pollution accidents and dissensions etc. |
daily duties, such as work on prevention of the environmental pollution accidents and dissensions etc;

| Word Bank | ➢ Post Review environmental documents submitted by sub-project owner, and supervise the implementation of EMP. |
V. Environmental Management Procedures

8 The environmental management procedure covers the following five aspects of preparation/construction phase and two aspects of implementation phase. Each of the aspects is described as below along with the requirements and responsibilities for stakeholders.

A. Sub-Project Preparation and Construction Phase
   1. Sub-project Screening and Categorization
   2. Preparation of Environment Documentation
   3. Public Consultation and Disclosure (if applicable)
   4. Grievance Mechanism (if applicable)
   5. Review and Approval

B. Implementation Phase
   6. Monitoring
   7. Reporting

A Sub-Project Preparation and Construction Phase

5.1 Sub-project Screening and Categorization

9 PMO is responsible for the subproject screening. The eligible enterprises will be selected based on approved HCFC Phase-out Management Plan, and their application materials sent to the PMO. PMO will exclude from financing any proposed sub-project included in the Exclusion List presented in Annex 1. Sub-projects include six types and PMO will define the types for different HCFC phase-out subprojects:

1) PU foam enterprises
   ① Conversion at present location
   ② Conversion at new location
   □ System house conversion
④ Foam enterprises engaging in identification and testing of potential substitutes

2) HCFC Production sector

⑤ HCFC production reduction

⑥ HCFC alternatives production

5.2 Preparation and Requirements of Environmental Documents

The sub-project owner will provide the environmental documents and governmental approval. The EA documentation requirements for different types of sub-projects are outlined in the table below:

Table 5.1 Environmental Documentation
<table>
<thead>
<tr>
<th>Types of Sub-projects</th>
<th>Required Documents*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE 1 Conversion at present location</td>
<td>• Approval from Local Environmental Protection Bureau, and</td>
</tr>
<tr>
<td></td>
<td>• Approval of Fire-fighting Bureau if flammable alternatives such as Hydro-Carbon (HC) are used</td>
</tr>
<tr>
<td>TYPE 2 Conversion at new location</td>
<td>*For the operations at the new location:</td>
</tr>
<tr>
<td></td>
<td>• EIA/EMP for the operations at the new location, EIA approval from local EPB, and</td>
</tr>
<tr>
<td></td>
<td>• Approval from Fire-fighting Bureau if flammable alternatives such as Hydro-Carbon (HC) are used. For the existing premise.</td>
</tr>
<tr>
<td></td>
<td>• Environmental Due Diligence investigations are required for identifying environmental liabilities for the existing premise, and</td>
</tr>
<tr>
<td></td>
<td>• Prepare, if necessary, a mitigation and site remediation plan.</td>
</tr>
<tr>
<td>TYPE 3 System house conversion</td>
<td>• Approval from Local Environmental Protection Bureau;</td>
</tr>
<tr>
<td></td>
<td>• Approval from Fire-fighting Bureau if flammable alternatives such as Hydro-Carbon (HC) are used.</td>
</tr>
<tr>
<td></td>
<td>• Confirmation that polyol system houses and associated small/median foam enterprises participated in the phase-out project are in compliance with application national laws and regulations;</td>
</tr>
<tr>
<td>TYPE 4 Foam enterprises engaging in identification and testing of potential substitutes</td>
<td>• EMP (refer to Annex2-2)</td>
</tr>
<tr>
<td>TYPE 5 HCFC production reduction</td>
<td>• None</td>
</tr>
<tr>
<td>TYPE 6 HCFC alternatives production</td>
<td>• EIA and EMP</td>
</tr>
<tr>
<td></td>
<td>• EIA approved by local EPB</td>
</tr>
</tbody>
</table>

*Note: Occupational health will be addressed in the EA/EMP. If a clearance or approval from relevant government agencies or institutions is required by National regulations, the enterprise is requested to provide the PMO with such an approval or certificate(s).

11 If any sub-project is excluded in the categories indicated above, the required environmental documents will be clarified after the discussion between the World Bank and PMO.

12 In case of foam facilities dismantling, to ensure that production site meet the
local land use planning and environmental protection requirements, if site clean-
up is warranted by due diligence report or required by Local Environmental
Protection Bureau, the subproject owner should prepare a site remediation plan
and its implementation follow the approved site remediation plan in accordance
with applicable laws, regulations and policies.

Environment Impact Assessment (EIA)

13 The enterprise is responsible for EIA Documentation preparation. The
environmental assessment of the sub-project will be carried out by the qualified
and experienced institutions, which entrusted by the sub-project owner and have
the consulting certificates from the departments of Environmental Protection.

Environmental Management Plan (EMP)

14 Sub-project owner is responsible for the preparation of EMP. An EMP consists
of a series of environmental protection measures during project design,
construction and implementation. Those measures eliminate or compensate the
negative environmental and social impacts, or at least help to control the impacts
at the acceptable levels. For conversion to alternatives (e.g. hydrocarbon) at new
location and HCFC alternatives production, EMP template is listed in Annex 2-
1. For identification and testing of potential substitutes in Chinese foam
enterprises, the EMP may refer to Annex 2-2.

Environmental Due Diligence Report

15 Subproject owner is responsible for preparation of the Environmental Due
Diligence Report with assistance from professional experts and institutions. The
due diligence investigation will be carried out by independent and experienced
institutions/consultants, which are entrusted by the sub-project owner. The
enterprises shall submit the qualification of the institutions or consultants and
the due diligence report to PMO for review.
Environment Due Diligence Report is required for identifying environmental liabilities, if any, and prepares, if necessary, a mitigation and remediation plan for the existing premise taking into account the future land-use plans. Environmental Due Diligence Report including but not limited to 1) the compliance with the laws and regulations of environmental protection, including whether received environmental administrative penalty or an environmental disputes, or whether environmental appeal petition or petitions happened; 2) the implementation status of environmental protection measures prescribed in environmental approval documents; 3) the operation of environmental protection measures; 4) the emissions of the pollutants, and leakage/spill of hazardous chemicals on the site which may lead to contamination; 5) the disposal of industrial solid waste and hazardous waste; and 6) whether use the banned substances and complying with industrial policy, etc.

5.3 Public Consultation and Disclosure

The sub-project owner is responsible for conducting public consultation. These responsibilities include: (a) public notification; (b) conducting the consultation and (c) recording the significant findings, conclusions and suggestions. Sub-project owners or the entrusted consultation agencies shall put the information available in the public and collect the opinions from surrounding residents. The methods for public consultation include questionnaire, workshop, and meeting, etc. The template and requirements are listed in Annex 3. The purpose of public consultation is to collect the information of environmental impacts caused by subprojects in surrounding residents and identify the important environmental issues they believe to be significant. Any significant issues, established during the public consultation, should be incorporated into EIA documents.

PMO or its consultants should review minutes of the public consultation conducted during the preparation of the EIA to determine if it was adequate. If the public consultation for the EIA was not adequate, the PMO requires the sub-
projects owner to perform another public consultation.

19 Requirements for public consultation are as follows:

<table>
<thead>
<tr>
<th>Table 5.2 Requirements for public consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-project type</td>
</tr>
<tr>
<td>TYPE 1 Conversion at present location</td>
</tr>
<tr>
<td>TYPE 2 Conversion at new location</td>
</tr>
<tr>
<td>TYPE 3 System houses conversion</td>
</tr>
<tr>
<td>TYPE 4 Foam enterprises engaging in</td>
</tr>
<tr>
<td>identification and testing of potential</td>
</tr>
<tr>
<td>substitutes</td>
</tr>
<tr>
<td>TYPE 5 HCFC production reduction</td>
</tr>
<tr>
<td>TYPE 6 HCFC alternatives production</td>
</tr>
</tbody>
</table>

20 For the sub-project that public consultation is required, in order to make the consultation more effective among different stakeholders, sub-project owner should provide the public with draft EIA documents before consultation. All final EIA documents should be locally disclosed at a public location where is accessible for the affected persons and other stakeholders. The public notification can be carried out through posters, newspaper and internet. It is recommended that enterprises or PMO place subproject EIA and EMPs on their websites.

5.4 Grievance Mechanism

21 In order to ensure that consultation, disclosure, and community engagement continues throughout the project implementation, the enterprises will establish a grievance mechanism.

22 Grievance Mechanism will be established in EIA documents to make sure that all complaints of affected persons will be responded in time. Sub-project owner should announce the appealing ways to the affected groups or individuals during
the public consultation. The grievance mechanism shall consist of (1) recording and reporting system, including written and oral appealing; (2) persons in charge of appealing; (3) Time required to appeals respond. The procedure is as follows, any people affected by adverse environmental impacts from the sub-project may write or talk to the sub-project owner directly and the sub-project owner should solve the issues with limited time. If affected people are not satisfied with the result, they may forward their appeal to local environmental protection authorities. If the decision of local environmental protection authorities is not acceptable to the affected people, they may forward their appeal to a court.

5.5 Review and Approval

23 **Domestic Review and Approval**: PMO will review the document package submitted by enterprise. For sub-project that EIA document and EMP are needed, PMO or its consultants will check for consistency between EIA and EMP prior to local EPB’s approval. If the environmental documents do not meet all the requirements, sub-project owners will be asked to provide additional information. After approved, EIA documents should be submitted to PMO together with EMP.

24 **Related Conditions and Responsibilities.** PMO will ensure that an appropriate clause is included in enterprises contract obligating the sub-project owner to implement the mitigation, monitoring, and reporting measures specified in the EMP and strictly follow the procedures according to related Chinese laws and regulations.

25 **Review and Approval from Word Bank**: The environmental documents will be post-reviewed by Word Bank. The review may include prior review during the early stage of project implementation, and post review after the enterprises and PMO are familiar with the EMF.

26 **Implementation Phase**: The enterprise is responsible for ensuring that all the requirements of the EMP are properly implemented. It is the responsibility of the
enterprises to ensure that relevant tender documents and contracts include requirements put forward in the EMP. During sub-project implementation, PMO has the right to check the documents and contracts to verify this condition has been satisfied.

5.6 Monitoring

During the project implementation, PMO will work with local environmental authorities and its consultants to monitor the implementation of HCFC phase-out subprojects and to ensure that all the specified EMPs, and the site remediation plans (if any) are implemented properly.

5.7 Reporting

During the project implementation, PMO will request the enterprises to report implementation of its EMP. The enterprises should carefully document monitoring results in accordance with the Monitoring Plan included in the EMP and identify any necessary corrective or preventive actions taken during the monitoring period. The progress report submitted by the sub-project owner should include the implementation of their EMPs (e.g. mitigation, monitoring) and whether if there are any significant environmental issues occurred, and how the issues were resolved or are being resolved. The PMO can request more frequent reporting if the EMP were not being implemented adequately.

The PMO will submit the progress report to World Bank regularly. The report should include: (a) implementation status of EMP (b) any issues that were occurred, and (c) how the issues were resolved or are being resolved.

VI. Capacity Building/Training

The Project will be administered by the PMO, which will designate staff to manage environmental risk and assure that procedures specified in the EMF are properly followed during implementation. In addition, qualified environmental consultants will be contracted to support the PMO to perform the tasks required
under this Framework in the identification and management of environmental risk in project evaluation and implementation.

The contracted experts and qualified consultants will provide environmental safeguard training to sub-project owners or other stakeholders. The EMP will be prepared and implemented by sub-project owner with assistance from qualified consultants. The training shall include (1) relevant requirements of environmental laws and regulations; (2) environmental assessment procedures; (3) Environmental issues may be caused by sub-project preparation and implementation.
Annex 1: Exclusion List

1) Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans.

2) Backward process, production or technology deemed not in accord with national industrial policy, environmental policy and technical policy.

3) Projects involving Environmental Sensitive Area.
Annex 2-1: Environmental Management Plan (For conversion to alternatives, e.g., hydrocarbon at new location and HCFC alternatives production)

An EMP consists of a series of mitigation, monitoring, and institutional measures to be taken during construction and operation phase in order to eliminate negative environmental and social impacts, or at least controlled at acceptable levels. The plan shall include the following:

A. Sub-Project Description

It will present a brief description of the Sub-project and include the actual investment, the location, and the characteristics of the new location or present location, for example, whether it is near to a protected area, cultural or historical heritage and so on. Additionally, it is needed to briefly describe in which purpose the land has been used, such as farming land or industry zone and the nearest population centers to the project location.

B. Mitigation Plan

This part is to identify and summarize all important possible environmental impacts and risks and describe every mitigation measures in detail. If necessary, the information about technical design, facility description and operation procedure should be included.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Issues</th>
<th>Mitigation Measures</th>
<th>Cost of mitigation</th>
<th>Responsibility*</th>
<th>Start-Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Operation</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Items indicated to be the responsibility of the contractor shall be specified in the bid documents
C. Monitoring Plan

Describe the measures taken during monitoring, including monitoring standards and locations, and selected methods and frequencies, etc.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Monitoring Standards</th>
<th>Monitoring Location</th>
<th>Monitoring Method</th>
<th>Monitoring time/frequency/duration</th>
<th>Budget (Yuan)</th>
<th>Responsibility</th>
<th>Starting Date</th>
<th>completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Institutional Arrangements

This part includes the illustration of organization arrangement and responsible persons for taking the mitigation measures and monitoring, for instance, who collects the data, who analyzes it, who prepares reports, whom the reports are sent to and how often.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Institutional Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection</td>
<td>Construction</td>
</tr>
<tr>
<td>Construction</td>
<td>Operation</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Construction</td>
</tr>
<tr>
<td>Construction</td>
<td>Operation</td>
</tr>
<tr>
<td>Report Preparation</td>
<td>Construction</td>
</tr>
<tr>
<td>Construction</td>
<td>Operation</td>
</tr>
<tr>
<td>Report Reception / frequency/who/how often</td>
<td>Construction</td>
</tr>
<tr>
<td>Construction</td>
<td>Operation</td>
</tr>
</tbody>
</table>
Annex 2-2: EMP (For foam enterprises engaging in identification and testing of potential substitutes)

Standard EMP is used for category of foam enterprises engaging in identification and testing of potential substitutes.

A. The Environmental Management Unit

The aim of the Environmental Management Unit is to ensure the environmental protection laws be followed, handle the testing in an environmental manner, monitor and record the effects of pollution treatment facilities, and guarantee the environment and employees’ health and safety has been considered.

The Environmental Management Unit will be responsible for:

- Carrying out mitigation measures and monitoring
- Recording information (e.g. leak or accidents)
- Preparing and implementing Environmental Emergency Plan
- Preparing and conducting environmental protection training.

The waste management is indicated in below in order to give an example of what kind of mitigation measures and monitoring procedures should be carried out during the project implementation for identification and testing of potential substitutes.

### Waste Management

<table>
<thead>
<tr>
<th>Management/mitigation measure</th>
<th>monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns/issue</td>
<td>Management/mitigation measure</td>
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<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Wastewater    | ➢ Identify opportunities to prevent or reduce wastewater pollution through such measures as recycle/reuse within their facility;  
➢ Wastewater will be treated in the wastewater treatment unit in enterprises to comply with the applicable standard before discharged into the drainage trench.                                                                                                                                                                                                                                           | COD, pH     |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Monitoring item |
|               | Time/frequency/continuous time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Local Responsible Environmental Monitoring Center |
| Air Emission  | ➢ Provide buffer zone around the operating zone;  
➢ Provide adequate ventilation for fugitive emission.  
➢ Collection of Volatile Organic Compounds (VOCs) through air extractors and remove VOCs with control devices such as condensers or activated carbon absorption.                                                                                                                                                                                                                                                     | TSP, SO₂    |
|               | 1 time/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Local Environmental Monitoring Center |
| Noise         | ➢ Selecting equipment with lower sound power level;  
➢ Installing silencers for fans;  
➢ Installing acoustic enclosures for equipment casing radiating noise;  
➢ Improving the acoustic performance of constructed building, apply sound insulation;  
➢ Installing vibration isolation for mechanical equipment.                                                                                                                                                                                                                                                                                             | Leq A        |
|               | 1 time/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Local Environmental Monitoring Center |
| Non-hazardous waste | ➢ Evaluate of waste production process and identification of potentially recyclable material, then recycle and reuse it;  
➢ Non-hazardous waste will be stored in separate watertight storage area and then treated by the sanitation department.                                                                                                                                                                                                                                                                                                          | Visual inspection. Ensure all wastes are stored and disposed appropriately. | Regularly | Local Environmental Monitoring Center |
<table>
<thead>
<tr>
<th>Hazardous waste</th>
<th>Hazardous waste will be stored segregated from non-hazardous waste</th>
<th>Visual inspection. Ensure hazardous waste is stored appropriately.</th>
<th>Regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Store in closed containers away from direct sunlight, wind and rain;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide adequate ventilation</td>
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<td></td>
<td>Conducting periodic inspections of storage areas and documenting the findings;</td>
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<td></td>
<td>Preparing and implementing spill response and emergency plans to address their accidental release;</td>
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<tr>
<td></td>
<td>Provide secondary containment for all on-site hazardous waste and waste storage facilities;</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Equipped with adequate firefighting equipment</td>
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<tr>
<td>Occupational health and Safety</td>
<td>Under operating conditions, workers should wear personal protective equipment, e.g. gas mask, PE gloves and other personal protection equipment. Appropriate measures such as ventilation, fire prevention and cooling should be planned and installed to accommodate the use of different chemicals.</td>
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</tr>
<tr>
<td></td>
<td>The workers should receive proper safety training and proved to be qualified through tests before assuming the position; When the use of hazardous chemicals is involved, a safety facilitator with adequate knowledge of safety operation of hazardous chemicals should be recruited.</td>
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<tr>
<td></td>
<td>No Smoking, No Food and No Fire in project site;</td>
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<td></td>
<td>Mark the caution signs both in Chinese and in English;</td>
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<tr>
<td></td>
<td>Safety use of electrical appliance.</td>
<td></td>
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<tr>
<td>Environmental Risks</td>
<td>Install alarm and adsorption facility;</td>
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<tr>
<td></td>
<td>Provide emergence response plan.</td>
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</tbody>
</table>

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Local Health authorities

Local Environmental Monitoring Center
Annex 3: Public Consultation

The followed documents should be provided:

- **Manner in which notification of the consultation was announced**: media(s) used, date(s), description or copy of the announcement

- **Forms of public consultation**: if there are two or more than two rounds of public consultation, sub-project owner can use questionnaire survey for the first round of consultation, while a meeting with project affected people as the second round of public consultation. In case of only one round of public consultation, the enterprise should organize a consultation meeting with the project affected people on the draft EIA documents.

**A. Questionnaire Survey**

Questions, Respondents (Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)), Investigation Scope, findings and Results

**B. Meetings, Discussions or Hearings**

- Date(s) when consultation(s) was (were) held
- Location(s) where consultation(s) was (were) held
- Who was invited
- Who attended
- Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)
- Meeting Program/Schedule
- What is to be presented and by whom
- Summary Meeting Minutes (Comments, Questions and Response by Presenters)
- List of decisions reached, and any actions agreed upon with schedules and deadlines and responsibilities.