I. Project Context

Country Context

The rapid economic development in China since 1978 has led to significant environmental pollution and ecological degradation. Committed to reversing this downward environmental trend, the Government has made environmental protection a national policy. Internationally, China has ratified numerous conventions including the Stockholm Convention on Persistent Organic Pollutants (POPs) for which China has prepared a National Implementation Program (NIP). POPs are a group of chemical substances that persist in the environment, can be transported far from their sources and bio-accumulated through the food web, and can “lead to serious health effects, including certain cancers, birth defects, dysfunctional immune and reproductive systems, greater susceptibility to disease and even diminished intelligence.” Under the Stockholm Convention, a total of 21 chemical substances are listed as POPs, including pesticides (such as dichlorodiphenyltrichloroethane), industrial chemicals (such as polychlorinated biphenyls) and unintentional by-products of industrial processes (such as dioxins and furans). The last group of chemicals is often called unintentionally produced POPs (UPOPs).

According to the China NIP, the pulp and paper sector is one of the priority sectors for control and reduction of UPOPs releases because the sector is: (a) a major source of water pollution in 2006, accounting for about 15% of national industrial wastewater and about 33% of national industrial chemical oxygen demand (COD) discharge; (b) one of the industrial sectors with the highest energy consumption; (c) expected to have high growth rates in the next decade; and (d) the largest source of UPOPs release under the Source Category of Production and Use of Chemicals and Consumer Goods. Among all pulp and paper production processes, the NIP identifies the elemental chlorine-based pulp bleaching process as the main source of UPOPs formation and releases, and proposes to adopt a series of measures before 2015 to control and reduce UPOPs release from China’s pulp and paper industries. To facilitate implementation of the NIP in this sector, the Chinese Government has requested the Bank to prepare and implement the proposed project to be financed by the Global Environment Facility (GEF), the financial mechanism of the Stockholm Convention. In March 2011, the GEF Council approved a $15.0 million grant to support this proposed project.

II. Sectoral and Institutional Context
In 2009 China had about 3,700 pulp and paper mills, including many of small capacity, with a total pulp production of 66.74 million tons. In contrast to many other countries, China has relied heavily on non-wood fiber materials to produce its virgin pulp, as the country has limited production capacity for wood fiber materials. As China promotes development of wood pulp production and consumes more imported wood and waste fiber, the share of non-wood pulp consumption over total pulp consumption has decreased from 40% in 2000 to about 15% in 2009. There has also been a corresponding decrease in the share of total virgin pulp consumption from non-fiber materials, from 84% in 2000 to about 68% in 2009. These statistics, and an estimate that the non-wood pulp industry provides direct or indirect employment to over eight million people, show the strategic importance of non-wood fiber materials in China.

Traditionally the pulp and paper sector produces or releases UPOPs into the environment as a result of the elemental chlorine-based pulp production processes widely used in the sector. To improve the environmental performance of this sector, China has initiated industry restructuring efforts since 1996 to encourage concentration of production capacity, support closure of inefficient small mills, and very recently ban the use of elemental chlorine-based technology of new mills and promote the development of large wood pulp based modern mills. China has issued a series of cleaner production guidelines since 2007, and the Wastewater Discharge Standards for the Pulp and Paper Industry (GB3544-2008) in 2008. The 2008 Standard requires all new mills established after August 1, 2008 to meet stricter discharge standards, including a water consumption standard, and for the first time an effluent standard on dioxins. This new standard further requires all existing mills to meet the discharge standards for the new mills starting July 1, 2011.

The pulp and paper sector, as a key source of water pollution in China, has been under strict environmental monitoring and enforcement by the municipal or provincial environmental protection bureaus (EPBs) since the mid 1990s. Data from online monitoring equipment (measuring COD concentration, volume of discharged wastewater, and in some cases, SO2 concentration and volume of discharged flue gas) at the mills are transmitted directly to the EPBs and sub-standard readings would result in an onsite visit by EPB agents. Non-compliance with environment standards triggers significant penalties in addition to the mandatory discharge fee.

As a result of these government initiatives, there has been a significant improvement in the sector’s environmental performance (e.g., reducing COD discharge from about 3.1 million tons in 2000 to about 1.3 million tons in 2008). The positive results of these policy measures and active environmental monitoring and enforcement have provided a sound policy basis for the sector to eliminate elemental chlorine bleaching based production to comply with the 2008 Standards. Many large wood pulp mills have adopted BAT/BEP that are based on elemental chlorine free technologies. In contrast, few large existing non-wood mills have followed the national policy and acted on their own to adopt BAT/BEP for their non-wood pulp production lines.

Two challenges face the Government in encouraging sector wide adoption of BAT/BEP: (a) high investment cost and yet-to be demonstrated benefits of BAT/BEP adoption in the non-wood sector; and (b) limited dioxin monitoring and enforcement capacity at the local level to ensure compliance of exiting mills with the 2008 discharge standards. To respond to these challenges, the Ministry of Environmental Protection (MEP), in consultation with other stakeholders, proposed to focus this project on (a) demonstrating BAT/BEP in four existing non-wood mills which typify the most commonly used non-wood fiber material in China: straw, reed, bamboo and bagasse; and (b) strengthen the government’s capacity in monitoring and enforcement of the 2008 dioxin standard. Based on the results of the demonstration projects, MEP will develop a long-term national action plan to scale up BAT/BEP adoption and further control the formation and release of UPOPs from both the wood and non-wood pulp sectors.

**III. Global Environmental Objective(s)**

The project development objectives are to: (a) demonstrate the result of adoption of best available techniques and best environmental practices (BAT/BEP) in four selected non-wood pulp mills; and (b) support China in developing and adopting a long-term action plan to guide the promotion of a sector-wide BAT/BEP adoption.

**IV. Project Description**

**Component Name**
- BAT/BEP Investment in Participating Mills
- National Action Plan for Sector-Wide Replication
- Monitoring and Evaluation
- Project Management

**V. Financing (in USD Million)**

<table>
<thead>
<tr>
<th>For Loans/Credits/Others</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>BORROWER/RECIPIENT</td>
<td>66.00</td>
</tr>
<tr>
<td>Global Environment Facility (GEF)</td>
<td>15.00</td>
</tr>
<tr>
<td>Total</td>
<td>81.00</td>
</tr>
</tbody>
</table>
VI. Implementation

MEP is the lead national agency responsible for project implementation. MEP is the designated national lead implementing agency for all POPs activities and for implementation of the POPs Convention. The inter-ministerial National Coordination Group (NCG) for Stockholm Convention’s implementation, under the leadership of the MEP, is the national coordination mechanism of the Chinese government for implementation of the Stockholm Convention, responsible for reviewing and implementing national guidelines and policies on POPs management and control, and coordinating all issues related to POPs management and Convention implementation. The NCG – or a sub-committee thereof, as appropriate - complemented with membership from the local Environmental Protection Bureaus (EPBs) and China Paper Association (CPA), will serve as the project Advisory Committee and facilitate policy development and harmonisation across government departments.

Within MEP, the Foreign Economic Cooperation Office (FECO), in addition to hosting the office of the NCG, has managed preparation of the project and will be responsible for overall project implementation. It will be the signatory on the project’s PBF agreements. In the four project provinces, provincial and municipal EPBs are responsible for monitoring environmental performance of the pulp and paper industry within their specific local jurisdiction, issuing provincial/municipal environmental policies and standards, enforcing environmental policies, and disclosing environmental information. Within the scope of this project’s implementation, the provincial EPBs will be responsible for the routine monitoring of the four participating mills, as well as all the mills in the provinces in question. They will also contribute to the development of capacity on UPOPs monitoring, including rapid assessment monitoring, as required, and assume responsibility for disclosure of information, as well as project level reporting to the MEP/FECO on all their provincial level project activities.

The four pulp and paper mills selected for participation in the project activities will carry out BAT/BEP investments, in compliance with national and local environmental policies and standards. They will enter into a PBF agreement with MEP/FECO to convert their current chlorine-based technology to elemental chlorine free based BAT/BEP production. Based on the PBF agreement, the mills will accept inspections carried out by MEP/FECO and provincial and municipal EPBs, dioxin baseline and post-BAT/BEP adoption monitoring by a qualified dioxin laboratory, and verification carried out by an independent verification entity (IVE) recruited by MEP/FECO. The mills will receive grant support from the project after their performance is verified as satisfactory by the IVE.

CPA, a nationwide industrial association, coordinates and supports compliance actions within the pulp and paper sector, facilitates information exchanges among members of the Association, serves as liaison between its member enterprises and the government, and contributes to the formulation of sector development strategies based on its membership’s inputs. CPA will assist the project by: (a) acting as liaison for the Chinese pulp and paper industry in the coordination and development of the national action plan for BAT/BEP implementation; and (b) facilitating policy implementation, and BAT/BEP promotion throughout the sector.

VII. Safeguard Policies (including public consultation)

<table>
<thead>
<tr>
<th>Safeguard Policies Triggered by the Project</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment OP/BP 4.01</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Natural Habitats OP/BP 4.04</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Forests OP/BP 4.36</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Pest Management OP 4.09</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Physical Cultural Resources OP/BP 4.11</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Indigenous Peoples OP/BP 4.10</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Involuntary Resettlement OP/BP 4.12</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Safety of Dams OP/BP 4.37</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Projects on International Waterways OP/BP 7.50</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Projects in Disputed Areas OP/BP 7.60</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

VIII. Contact point

World Bank
Contact: Jiang Ru
Title: Senior Environmental Specialist
Tel: 473-8677
Email: jru@worldbank.org

Borrower/Client/Recipient
Name: Ministry of Finance
Contact: Xiaosong Zheng
Title: Director General, International Dept
Tel: 86-10-68551124
Email: xs.zheng@mof.gov.cn

Implementing Agencies
Name: Foreign Economic Cooperation Office of Ministry of Environmental Protection
Contact: Ms. Qiong Ding
Title: Deputy Division Chief
Tel: 86108226-8810
Email: ding.qiong@mepfeco.org.cn

IX. For more information contact:
The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop