

Integrated Safeguards Data Sheet (ISDS)	
Section I – Basic Information	
Date ISDS Prepared/Updated: October 27, 2005 (will be updated after return of the appraisal mission)	
A. Basic Project Data	
A.1. Project Statistics	
Country: China	Project ID: P094388
Project: CHINA HFC-23 EMISSIONS REDUCTION PROJECT	TTL: Neeraj Prasad
Total project cost (by component): \$500 million	
Appraisal Date: 11/14/2005	IBRD Amount (\$m):
Board Date: not applicable	IDA Amount (\$m): 0.00 GEF Amount (\$m): 0.00 PCF Amount (\$m): 0.00 Miscellaneous Funds (various Bank Carbon Funds) (\$m): 500
Managing Unit: EASES	Sector: Environment
Lending Instruments: CF	
Is this project processed under OP 8.50 (Emergency recovery)? No	
Environmental Category: A	
A.2. Project Objectives	
<p>The project objective is to support China's participation in global efforts to mitigate human-induced climate change by (i) financing the purchase of up to \$500 million of HFC-23 credits (approximately 90 million TCO₂e) through an Emissions Reduction Purchase Agreement (ERPA) with two of China's chemical manufacturing companies, the Jiangsu Meilan Chemical Group (JMC) and the Changshu 3F Zhonghao New Chemical Materials Co., Ltd (3F Zhonghao); and (ii) facilitating the application of substantial revenues accruing to the Government, as a result of the sale of ERs, to sustainable development through further domestic carbon reduction initiatives, through a partnership with the Government of China, described in a Memorandum of Understanding (MoU). The partnership would involve the Bank's technical assistance for establishment and the initial operation of a Clean Development Facility (CDF).</p>	
A.3. Project Description	
<p>China approved the Kyoto Protocol in August 2002, and there is now strong interest in participation in the CDM and the market for ERs. HFC-23 is a potent greenhouse gas (at 11,700 times the global warming potential of carbon dioxide). China is the world's largest source of HFC-23 emissions. HFC-23 emission reductions projects in China will therefore contribute significantly to global efforts to mitigate climate change.</p> <p>This project will involve installation of incineration facilities to destroy HFC-23 emissions generated during production of HCFC-22 at Changshu 3F Zhonghao New Chemical Materials Company, Ltd. (Changshu 3F) and Jiangsu Meilan Chemical Company (Jiangsu Meilan). The thermal oxidation technology to be used at these incineration facilities is the only approved methodology for HFC-23 emission reduction, with a destruction efficiency of over 99.99 percent. This technology has been successfully used for destroying HFC-23 in the UK and Japan, and also in two CDM projects (Republic of Korea and India). The proposed project will result in a Carbon Finance Emissions Reduction Purchase Agreement and does not involve any Bank lending. As a trustee of the various Carbon Funds it manages, the Bank will purchase ERs through 2012 from the two participating companies.</p> <p>The Bank has worked with the Government of China to ensure that they set aside a significant portion of the HFC-23 revenues (65%) to establish a Sustainable Development Facility which would finance further emission reduction projects, consistent with the CAS and with China's 11th Five Year Plan priorities. Projects and activities funded by the SDF are not part of the project, which is limited to the purchase of emissions and the provision of technical assistance for establishment and initial operation of the Facility.</p>	

A.4. Project Location and salient physical characteristics relevant to the safeguard analysis.

The HFC-23 reduction will be carried out at the existing sites of the Changshu 3F and Jiansu Meilan Companies, which produce HCFC-22 in addition to many other chemical products and intermediates. Therefore the project does not involve any land acquisition or resettlement of people.

Changshu 3F is located in an industrial park, which was established by the Government in 1999 on a 5.2 km² of land reclaimed from the former bed of the Yangtze River. Currently, the industrial park includes 10 companies, all of which are involved in fluorochemical production and four of which are of large size. Changshu 3F occupies 300,000 m² of land and is involved in the production of anhydrous HF, HFC-152a, HCFC-142b, HFC-32, HFC-125, HCFC-22, TFE, TFP, and HFC-227. There are no critical natural habitats close to the plant site. The closest surface water is Fushan Canal, which is parallel to the southern and eastern boundaries of the Changshu 3F site at a distance of approximately 30 meters. The canal is connected to the Yangtze River, which is 4 km north of the site. The site is approximately 2 km west of Fushan Village (with a population of 4,000) and 20 km southwest of Changshu City. The shallow groundwater, which is 1-3 meters below the ground level with a depth of 6 meters, has no current use; its quality is not known although no spills have been reported from the Changshu 3F site. The plant area has not been subject to flooding or earthquake. No damage to the plant installations have resulted from typhoons (which occur about 1.5 times per year) or hails (which occur about once a year).

Jiansu Meilan occupies 667,000 m² in an industrial park, where 10 companies (including a large petrochemical company) are located. At this site, Jiansu Meilan produces a variety of chemical products (e.g. caustic soda, aniline, organic silicon, polytetrafluoroethylene, KFM, and PVC) and chemical intermediates (such as chlorine, hydrochloric acid, hydrofluoric acid, anhydrous hydrogen fluoride, methylene chloride, chloroform, HCFC-22, tetrafluoroethylene, perfluoropropene, chloroethylene). There are no critical natural habitats close to the plant site. The closest surface water is a canal along the northern boundary of the site. This canal is connected to the Yingling River, which is to the west of the site. The nearest residential area is the housing complex established by Jiansu Meilan for its employees (currently 500 people live in this complex). Downtown Taizhou City is approximately 6 km southeast of the site. The shallow groundwater is 12 cm to 56 cm below the ground level and has no current use; its quality is not known although no spills have been reported from the Jiansu Meilan site. The plant area has not been subject to flooding, earthquakes, or typhoons.

B. Check Environmental Category A , B , C , FI

Comments: The project is given an environmental assessment Category A because it involves incineration of chlorinated organic compounds.

C. Safeguard Policies Triggered

	Yes	No	TBD
Environmental Assessment (OP/BP 4.01)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Natural Habitats (OP/BP 4.04)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pest Management (OP 4.09)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cultural Property (draft OP 4.11 - OPN 11.03 -)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Involuntary Resettlement (OP/BP 4.12)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Indigenous Peoples (OD 4.20)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forests (OP/BP 4.36)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Safety of Dams (OP/BP 4.37)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Projects in Disputed Areas (OP/BP 7.60)*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Projects on International Waterways (OP/BP 7.50)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section II – Key Safeguard Issues and Their Management**D. Summary of Key Safeguard Issues.**

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

D.1. (a) Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts.

The Bank's environmental and social safeguards for companies participating in this project will apply to the HFC-23 reduction schemes and the underlying HCFC-22 production processes. No Bank safeguard policy is triggered except for OP4.01, Environmental Assessment. An environmental assessment (EA) is being conducted for each HFC-23 investment facility. In addition, as the HFC-23 gas is generated from the HCFC-22 production facilities, environmental due diligence assessments of the HCFC-22 production and associated storage and waste management facilities at these two companies was also carried out.

As the HFC-23 emission reductions project is dictated by the requirements of the Kyoto Protocol, only those HCFC-22 production facilities which were commissioned before December 31, 2001 were selected within the physical boundary of the due diligence environmental assessment, and the corresponding HFC-23 gas flow rates are considered for determining the capacity of the HFC-23 emission reductions. These HCFC-22 facilities correspond to Lines A and B at Changshu 3F and Plants A and B at Jiangsu Meilan's HCFC-22 production facilities.

EA for the HFC-23 Investments. The EA for each of the two HFC-23 emission reduction facilities was prepared by the Chinese Academy of Environmental Sciences and China Green Enterprises, Ltd. according to terms of reference (ToR) agreed by the two participating companies, FECO/SEPA, and the World Bank.

Each EA describes the site and its surroundings (and will include a map), the HFC-23 reduction process and its environmental discharges (air, wastewater, and solid waste discharges), impacts of these discharges on receptors, safety-related issues (e.g. spills, explosions, fires) associated with the handling of process chemicals (e.g. alkali) and wastes. The EAs also evaluate alternatives and propose environmental mitigatory measures for environmental discharges and safety-related issues. Each EA includes an environmental management plan (EMP) that describes the organizational structure (including staff responsibilities) for environmental management, and training needs and arrangements for environmental personnel at each facility, as well as a plan for monitoring environmental discharges (types of pollutants to be monitored, type (continuous vs. grab sampling) and frequency of monitoring, and the recordkeeping and reporting procedures to be followed. Drafts of the EAs have been prepared and reviewed by the Bank. Final reports are expected by end October.

Two public consultations were conducted for each project, the first one to discuss the project and the second one to discuss the results of the EA. The meetings for the Jiangsu Meilan project were held on August 26 and September 16; the meetings for Changshu 3F were held on September 2 and 26. Statistics on the participants were conducted. In both cases, participants were supportive and did not raise concerns. Final versions of the EAs and the due diligence assessments are expected by October 28, 2005. They will be disclosed through the Bank's PIC in Washington, D.C. and in Beijing, and at the two sites.

In the incineration of HFC-23, formation of dioxins/furans is a possibility under non-ideal operating conditions because the feed gas to the incinerator would contain small amounts (less than about 10 percent) of chlorine-bearing organic compounds. However, this possibility is remote because: (i) the process design is based on an incineration temperature of 1,200°C and a residence time of 1.6-2.0 seconds; (ii) the inputs to the incinerator are all in gaseous phase, which would enhance the destruction efficiency; and (iii) incineration gases are washed with water and an alkali before being emitted to the atmosphere. In case of upset process conditions, mitigatory measures are available (e.g. the feed to the incinerator would be automatically shut off, and the gases from the system can be collected in a storage tank).

Environmental Due Diligence Assessments for the HCFC-22 Production Facilities. As the HCFC-22 production facilities occupy only a small fraction of the entire participating company sites, where production of many other products also take place, the boundary for the HCFC-22 production activities was defined to include: (i) the storage areas for the HCFC-22 process raw materials, products, by-products, and waste storage areas, (ii) the HCFC-22 production facilities, (iii) the HCFC-22 waste management facilities (e.g. incineration, wastewater treatment, and landfill facilities) that are owned or operated by each participating company, and (iv) non-physical systems such as environmental management, monitoring systems and emergency procedures adopted by each participating company. The due diligence environmental assessment is based on written and verbal information provided by the participating company officials, in response to the Due Diligence Environmental Assessment Protocol designed by the World Bank, and additional information obtained by a World Bank mission during the site visit of the two companies in August 2005. No large-scale, significant or irreversible impacts have been identified from the HCFC-22 production facilities. Measures to strengthen current weaknesses have been identified, will be discussed with the companies, and included in an agreed Action Plan. The EMP and the Action Plan will be referenced in the ERPAs to be signed with the two companies.

<p>D.1 (b). Describe any potential cumulative impacts due to application of more than one safeguard policy or due to multiple project component</p> <p>There are no known potential cumulative negative impacts due to application of more than one safeguard policy or multiple project components.</p>
<p>D.1c. Describe any potential long term impacts due to anticipated future activities in the project area.</p> <p>No indirect and/or long-term impacts have been identified due to HFC-23 emission reduction investments.</p>
<p>D.2. Describe the treatment of alternatives (if relevant) (to be updated after pre-appraisal mission)</p> <p>Alternative options have been identified and are being assessed with respect to the following:</p> <ul style="list-style-type: none"> - <u>Process options for HFC-23 emission reduction</u>. The following options are being considered: (i) without the project option, (ii) incineration, (iii) process optimization, and (iv) process optimization combined with incineration. The EAs are being revised to clearly reflect this analysis. - <u>Control of air pollutants</u> (e.g. dioxins) during steady-state as well as non-steady-state (i.e. during process start-up, process shut-down, and upset process conditions). The following options are being considered: (i) no gaseous emissions controls, (ii) installation of a duplicate (i.e. parallel) gas cleanup system, and (iii) installation of storage capacity to capture the pollutants which would otherwise be emitted to the atmosphere. The final version of the EAs will reflect this analysis. - <u>Wastewater discharges</u>. The following options are being considered: (i) no wastewater controls (i.e. direct discharge to the surface water), (ii) use of a dedicated wastewater treatment system for the HFC-23 emission reduction plant with the discharge of the treated waters to the surface water, (iii) use of a dedicated wastewater treatment system for the HFC-23 emission reduction plant with the discharge of the treated waters to the entire facility's wastewater treatment plant, and (iv) discharge to the entire facility's wastewater treatment plant. For options (ii) and (iii), alternative process schemes (e.g. type of dewatering equipment) and/or treatment chemicals (e.g. NaOH, KOH) are being evaluated. For options (iii) and (iv), the impact of HFC-23 treated waters/untreated wastewaters on the design and operating conditions of the entire facility's wastewater treatment plant are being evaluated. - <u>Solid waste discharges</u>. Hazardousness or non-hazardousness of the wastewater treatment sludge is being discussed. At a minimum, the following options will be considered if the sludge is determined to be non-hazardous: (i) use as input material to the cement kiln, (ii) use as input material for road construction, and (iii) landfilling.
<p>D.3. Describe measures taken by the borrower to address safeguard issues. Provide an assessment of borrower capacity to plan and implement the measures described.</p> <p>a) Environmental Assessment (OP/BP/GP 4.01)</p> <p>FECO engaged a consultant team to prepare an EA for the HFC-23 reduction investment project at each participating company. The consultant ToRs for these EAs were reviewed and agreed by FECO, participating companies, and the Bank. Drafts of the EAs and their Environmental Management Plans (EMPs) have been prepared and were reviewed by the Bank. Proposed revisions are under discussion. Final drafts are expected by end October. In addition, the World Bank conducted a due diligence assessment of the HCFC-22 production systems at these two companies.</p> <p>The safeguards issues to be addressed under these projects will be specified as the Environmental Management Plans of the EAs. The recommendations of the due diligence environmental assessments will be taken into account in the agreed Action Plans. Capacities of the participating companies to implement the safeguard issues have been assessed, and recommendations for further strengthening have been prepared. Both companies are ISO-14000 certified and are in compliance with relevant Chinese environmental regulations. During project implementation, each participating company will ensure operation of the HCFC-22 production and HFC-23 reduction facilities in compliance with the applicable environmental and occupational health and safety regulations. Discharge monitoring and reporting will be in accordance with the requirements established in the EMP/EA for the participating companies.</p>
<p>b) Natural Habitats (OP/BP 4.04)</p> <p>NA</p>
<p>c) Re. Involuntary Resettlement (OP/BP 4.12)</p> <p>NA</p>
<p>d) Re. Indigenous Peoples (OD 4.20)</p> <p>NA</p>

e) Re: Forest (OP/BP 4.36)			
NA			
D.4. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.			
The key stakeholders of the project's investment component will be the Government of China, the provincial/local government authorities, and HCFC-22 production companies. The project is not expected to adversely impact the local population because: (i) the potentially adverse impacts will be mitigated through proper project design in terms of selection of technologies, equipment, and process control/safety measures, and (ii) proper training of the operating personnel. In addition, the HCFC-22 production and HFC-23 emission reduction facilities are far away from residential areas.			
E. Disclosure Requirements			Date or Not Applicable
Environmental Assessment/Audit/Management Plan/Other:			
Date of receipt by the Bank			09/30/05 (initial) 10/18/05 (revised) 10/28/05 (expected date of final)
Date of "in-country" disclosure			.../.../...
Date of submission to InfoShop		/..
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors			NA
Resettlement Action Plan/Framework/Policy Process:			
Date of receipt by the Bank			
Date of "in-country" disclosure			
Date of submission to InfoShop			
Indigenous Peoples Development Plan/Framework:			
Date of receipt by the Bank			
Date of "in-country" disclosure			
Date of submission to InfoShop			
Pest Management Plan:			
Date of receipt by the Bank			
Date of "in-country" disclosure			
Date of submission to InfoShop			
Dam Safety Management Plan:			
Date of receipt by the Bank			
Date of "in-country" disclosure			
Date of submission to InfoShop			
If in-country disclosure of any of the above documents is not expected, please explain why.			
Section III – Compliance Monitoring Indicators at the Corporate Level			Yes No NA
OP/BP 4.01 - Environment Assessment:			
Does the project require a stand-alone EA (including EMP) report?			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
If yes, then did the Regional Environment Unit review and approve the EA report? (Safeguards review meeting scheduled for 11/03/05)			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OP/BP 4.04 - Natural Habitats:			
Would the project result in any significant conversion or degradation of critical natural habitats?			<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?			<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
OP 4.09 - Pest Management:			
Does the EA adequately address the pest management issues?			<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
Is a separate PMP required?			<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
If yes, are PMP requirements included in project design?			<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>

Draft OP 4.11 (OPN 11.03) - Cultural Property:			
Does the EA include adequate measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on physical cultural resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OD 4.20 - Indigenous Peoples:			
Has a separate indigenous people development plan been prepared in consultation with the Indigenous People?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, then did the Regional Social Development Unit review and approve the plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OP/BP 4.12 - Involuntary Resettlement:			
Has a resettlement action plan, policy framework or policy process been prepared?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, then did the Regional Social Development Unit review and approve the plan / policy framework / policy process?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OP/BP 4.36 – Forests:			
Has the sector-wide analysis of policy and institutional issues and constraints been carried out?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project design include satisfactory measures to overcome these constraints?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project finance commercial harvesting, and if so, does it include provisions for certification system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OP/BP 4.37 - Safety of Dams:			
Have dam safety plans been prepared?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OP 7.50 - Projects on International Waterway:			
Have the other riparians been notified of the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If the project falls under one of the exceptions to the notification requirement, then has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
What are the reasons for the exception? Please explain:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has the RVP approved such an exception?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OP 7.60 - Projects in Disputed Areas:			
Has the memo conveying all pertinent information on the international aspects of the project, including the procedures to be followed, and the recommendations for dealing with the issue, been prepared, cleared with the Legal Department and sent to the RVP?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the PAD/MOP include the standard disclaimer referred to in the OP?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BP 17.50 - Public Disclosure			
Have relevant safeguard policies documents been sent to the World Bank's Infoshop? <i>(Final versions of the EAs and the due diligence assessments are expected by October 28, 2005, and will be deposited at the Bank's PIC.)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs? <i>(Public meetings were held at both sites to discuss EA findings. The final versions of the documents will be disclosed at the two sites.)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All Safeguard Policies:			
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of the safeguard measures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Have safeguard measures costs been included in project cost?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will the safeguard measures costs be funded as part of project implementation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signed and submitted by:	Name	Date	
Task Team Leader:	Neeraj Prasad		
Project Safeguards Specialist 1:	Bekir Onursal		
Project Safeguards Specialist 2:	Songling Yao		
Approved by:			
Regional Safeguards Coordinator	Glenn S. Morgan		
Comments			
Sector Director	Maria Teresa Serra		
Comments			

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