

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country:	People's Republic of China	Project Title:	Chemical Industry Energy Efficiency and Emission Reduction Project
Lending/Financing Modality:	Financial Intermediation Loan	Department/Division:	East Asia Department Energy Division

<p>I. POVERTY AND SOCIAL ANALYSIS AND STRATEGY</p> <p>Poverty targeting: general intervention</p>
<p>A. Links to the National Poverty Reduction and Inclusive Growth Strategy and Country Partnership Strategy</p> <p>The Asian Development Bank (ADB) country partnership strategy, 2011–2015, for the People's Republic of China (PRC) focuses on (i) sustaining equitable and inclusive growth, which directly contributes to reducing poverty and income disparity; (ii) improving the environment; (iii) promoting private sector development; and (iv) strengthening regional cooperation and integration.^a During the period covered by the 12th Five-Year Plan, 2011–2015, the Government of the PRC has given priority to energy efficiency improvement. ADB's Energy Policy has selected promoting energy efficiency as one of the three pillars of ADB's energy sector assistance.^b The Energy Policy has identified expanding ADB's assistance to industrial energy efficiency improvement through collaboration with industry organizations, domestic banks, and specialized agencies for promoting energy efficiency and energy service companies as a key strategy for shifting developing Asia to a low-carbon growth path. The proposed project is fully consistent with the objectives and strategies of the country partnership strategy for the PRC and ADB's Energy Policy.</p> <p>Rapid economic growth has outpaced environmental protection in many provinces. Recognizing the strong correlation between poverty and the environment, the government has prioritized energy efficiency and emission reduction in cooperation with ADB. The project is expected to achieve a positive social impact in the project areas and beyond through the reduction in global pollutants. It will result in energy savings and a reduction of greenhouse gas (GHG) emissions. It will have a positive social impact by reducing the intentional use of mercury, and avoiding other environmental damages associated with coal use.</p>
<p>B. Results from the Poverty and Social Analysis during PPTA or Due Diligence</p> <p>1. Key poverty and social issues. The PRC is the world's largest producer and consumer of polyvinyl chloride (PVC), producing about one third of the world's PVC. More than 80% of the PVC produced in the PRC is made using an energy-intensive, calcium carbide-based method, which requires mercury as catalyst. Rapid expansion of the PVC industry since 2001 has led the mercury consumption of the PVC industry to increase from 350 tons in 2002 to about 1,300 tons in 2013. As a result of this high demand for mercury, the PRC is the world's largest intentional user of mercury, with its PVC industry alone accounting for almost half of the world's intentional use. To satisfy this demand, the PRC continues legal mercury mining, while the rest of the world, apart from the Kyrgyz Republic, has banned it due to its associated health hazards.</p> <p>Mercury is one of the most toxic heavy metals; it persists in the environment once released. In water, inorganic mercury can be transformed by bacteria to methylmercury. Methylmercury is a neurotoxin that causes memory loss, language impairment, kidney damage, and damage to the digestive system. Particularly, human embryos, fetuses, infants, and children are vulnerable because mercury interferes with their neurological development. Methylmercury is considered as possibly carcinogenic by the International Agency for Research on Cancer.^c Dietary ingestion is the major source of human exposure. While seafood consumption is usually considered as the primary route to human methylmercury exposure, recent studies have shown that consumption of rice grown in mercury mining areas is another major pathway to methylmercury intoxication of humans.^d Moreover, when mercury is mobilized, it persists in the environment, where it is easily transported by air currents and by water.</p> <p>A survey from 10 mining areas in Guizhou, Hunan, and Guangdong provinces, three of the most important mercury mining as well as rice cultivating areas in the PRC, showed that the average concentration of (i) total mercury in rice seeds exceeded the maximum permissible limit set by the PRC for crops; and (ii) methylmercury mostly exceeded the recommended limits by the World Health Organization, constituting a major public health concern and limiting equal development opportunities for the local population in the vicinity of these mercury mines.^e</p> <p>Apart from mercury mining, there are five stages in the PVC manufacturing process where mercury may be released: during the (i) storage of mercury chloride, (ii) replacement of the mercury catalyst and the activated carbon, (iii) dumping of the waste catalyst and activated carbon, (iv) clearing and dumping of sludge, and (v) collection and storage of mercury containing waste acid.^f Because of insufficient monitoring and verification and lack of statistics, the</p>

<p>exact amount of mercury actually emitted by the PVC industry in the PRC to the environment is unknown.</p> <p>As a signatory to the Minamata Convention on Mercury, the PRC is committed to phase out mercury use in its PVC industry within 5 years after commercial demonstration of an alternative catalyst technology. Subproject 1 of the proposed financial intermediary loan will demonstrate an alternate technology. Potentially, this subproject can induce the elimination of mercury use in the PRC's PVC industry and have positive indirect benefits.</p> <p>Indirect beneficiaries from this project are therefore people affected by mercury pollution, who will benefit from the elimination of the major pollution source.</p> <p>Subproject 2 will demonstrate a viable and low-cost opportunity to effectively reduce fluoroform emissions. The potent GHG has a global warming potential of 14,800 million tons of carbon dioxide equivalent over a 100-year time span. Thus, the subproject will significantly contribute to climate change mitigation efforts of the PRC.</p>	
II. PARTICIPATION AND EMPOWERING THE POOR	
<p>1. Summary of the consultation and participation process during project preparation.</p> <p>(i) Consultation with central government agencies. The National Development and Reform Commission, the Ministry of Finance, and the Ministry of Environmental Protection have been consulted to ensure the project is aligned with the government's development strategies and priorities.</p> <p>(ii) Nongovernment and private organizations. The processing team consulted with experts from the China Chlor-Alkali, the China Petroleum and Chemical Industry Federation, China Association of Fluorine and Silicon Industry and the Chinese Academy of Sciences and engaged them as advisors for the project.</p> <p>2. The following forms of civil society organization participation are envisaged during project implementation, rated as high (H), medium (M), low (L), or not applicable (NA):</p> <p><input checked="" type="checkbox"/> Information gathering and sharing (M) <input type="checkbox"/> Consultation <input type="checkbox"/> Collaboration <input type="checkbox"/> Partnership</p> <p>3. Participation plan.</p> <p><input type="checkbox"/> Yes. <input checked="" type="checkbox"/> No.</p>	
III. GENDER AND DEVELOPMENT	
<p>Gender mainstreaming category: No gender elements</p>	
A. Key issues.	
<p>The project outcome is not expected to provide direct and tangible benefits to women and girls during the project period. No gender related issues were identified.</p>	
B. Key actions.	
<p><input type="checkbox"/> Gender action plan <input type="checkbox"/> Other actions or measures <input checked="" type="checkbox"/> No action or measure</p>	
IV. ADDRESSING SOCIAL SAFEGUARD ISSUES	
A. Involuntary Resettlement	
Safeguard Category: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> FI	
<p>1. Key impacts. No impact.</p> <p>2. Strategy to address the impacts.</p> <p>All the identified subprojects in the first batch are located on property owned by the existing industries. There are no involuntary resettlement impacts. The first two subprojects were categorized as C. The subproject selection criteria and the environmental and social management system explicitly exclude subprojects that require land acquisition and involuntary resettlement.</p> <p>3. Plan or other Actions.</p> <p><input type="checkbox"/> Resettlement plan <input type="checkbox"/> Combined resettlement and indigenous peoples plan</p> <p><input type="checkbox"/> Resettlement framework <input type="checkbox"/> Combined resettlement framework and indigenous peoples planning framework</p> <p><input checked="" type="checkbox"/> Environmental and social management system arrangement <input type="checkbox"/> Social impact matrix</p> <p><input type="checkbox"/> No action</p>	
B. Indigenous Peoples	
Safeguard Category: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> FI	

<p>1. Key impacts. No direct impacts are anticipated. Is broad community support triggered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>2. Strategy to address the impacts. The two subprojects in the first batch are located in urban and semi-urban areas. There are no impacts on ethnic minorities, as no such groups reside in the vicinity of subproject sites or work in the factories. The subproject selection criteria and the environmental and social management system explicitly exclude future subprojects that would have any adverse impact on indigenous peoples.</p> <p>3. Plan or other actions.</p> <table border="0"> <tr> <td><input type="checkbox"/> Indigenous peoples plan</td> <td><input type="checkbox"/> Combined resettlement plan and indigenous peoples plan</td> </tr> <tr> <td><input type="checkbox"/> Indigenous peoples planning framework</td> <td><input type="checkbox"/> Combined resettlement framework and indigenous peoples planning framework</td> </tr> <tr> <td><input checked="" type="checkbox"/> Environmental and social management system arrangement</td> <td><input type="checkbox"/> Indigenous peoples plan elements integrated in project with a summary</td> </tr> <tr> <td><input type="checkbox"/> Social impact matrix</td> <td></td> </tr> <tr> <td><input type="checkbox"/> No action</td> <td></td> </tr> </table>	<input type="checkbox"/> Indigenous peoples plan	<input type="checkbox"/> Combined resettlement plan and indigenous peoples plan	<input type="checkbox"/> Indigenous peoples planning framework	<input type="checkbox"/> Combined resettlement framework and indigenous peoples planning framework	<input checked="" type="checkbox"/> Environmental and social management system arrangement	<input type="checkbox"/> Indigenous peoples plan elements integrated in project with a summary	<input type="checkbox"/> Social impact matrix		<input type="checkbox"/> No action	
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V. ADDRESSING OTHER SOCIAL RISKS										
<p>A. Risks in the Labor Market</p> <p>1. Relevance of the project for the country's or region's or sector's labor market, indicated as high (H), medium (M), and low or not significant (L). <input type="checkbox"/> unemployment <input type="checkbox"/> underemployment <input type="checkbox"/> retrenchment <input checked="" type="checkbox"/> core labor standards (M)</p> <p>2. Labor market impact. Subborrowers are required to comply with the relevant core labor standards and the occupational health and safety standards of the PRC applicable to the relevant industrial sector.</p>										
<p>B. Affordability No impact.</p>										
<p>C. Communicable Diseases and Other Social Risks</p> <p>1. The impact of the following risks are rated as high (H), medium (M), low (L), or not applicable (NA): <input checked="" type="checkbox"/> Communicable diseases (L) <input type="checkbox"/> Human trafficking <input type="checkbox"/> Others (please specify)</p> <p>2. Risks to people in project area. A covenant for sexually transmitted infections is proposed in the project agreement to compel contractors to distribute information on the risks of sexually transmitted infections.</p>										
VI. MONITORING AND EVALUATION										
No social indicators have been included in the design and monitoring framework, as there were no significant negative social impact caused by project activities, and no opportunities for gender mainstreaming.										

^a ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015*. Manila.

^b ADB. 2009. *Energy Policy*. Manila.

^c International Agency for Research on Cancer. Mercury and Mercury Compounds. *IARC Monographs (Volume 58)*. <http://monographs.iarc.fr/ENG/Monographs/vol58/mono58-8E.pdf>.

^d X. B. Feng et. al. 2008. Human exposure to methylmercury through rice intake in mercury mining areas, Guizhou province, China. *Environmental Science and Technology* 42, pp. 326-332; G.L. Qiu. 2008. Methylmercury Accumulation in Rice (*Oryza sativa* L.) Grown at Abandoned Mercury Mines in Guizhou, China. *Journal of Agricultural and Food Chemistry*, pp. A-D.

^e M. Meng et. al. 2014. Accumulation of total mercury and methylmercury in rice plants collected from different mining areas in China. *Environmental Pollution* 184 (2014). pp. 179-186.

^f China Council for International Cooperation on Environment and Development. 2011. *Special Policy Study on Mercury Management in China*. Beijing.

Source: Asian Development Bank estimates.