

ERS ATTACHMENT

ZHEJIANG GLASS COMPANY LIMITED (Including QINGHAI SODA ASH COMPANY LIMITED) ENVIRONMENTAL & SOCIAL ACTION PLAN (ESAP)

#	Task Description	Indicator of Task Completion	Required Completion Date
Shaoxing Facilities			
1	NOx emissions are kept in the order of 1920-2060 mg NOx/Ncm at the glass melting furnaces, based on official tests on the two oldest lines. The actual emission from the remaining plants has not yet been checked. The IFC/World Bank guidelines limit is 1,000 mg NOx/Ncm (up to 2,000 mg NOx/Ncm may be acceptable dependent on furnace technology and if justified in EIA).	NOx emissions tested for all furnaces, and the plant operations either optimized to achieve the 1,000 mg NOx/Ncm limit or the current emissions justified by ambient air monitoring found satisfactory according to WHO recommendations.	All furnaces emission and ambient air concentrations measured within 6 months of loan signing. If results do not meet the task completion indicator an action plan for achieving compliance, acceptable to IFC, has to be developed within 6 months after results are known.
2	Particulate emission has not been reliably measured. The IFC/World Bank guideline has a limit of 50 mg dust/Ncm for new plants, while existing operations have traditionally been accepted at 100 mg dust/Ncm.	Particulate emissions measured at all furnaces and the plant operations optimized to achieve 100 mg dust/Ncm.	All furnaces emission concentrations measured within 6 months of loan signing. If results do not meet the task completion indicator an action plan for achieving compliance, acceptable to IFC, has to be developed within 6 months after results are known.
3	Zhejaing Glass has in 2004/5 had accident frequencies in the range of 15-20 Lost-Day-Accident/Million-Man-Hour (LDA/MMH). This is a normal number in glass industries with manual glass handling, but high compared to other light industries and glass plants with	A plan prepared, for the gradual phase out of manual handling wherever reasonably possible in existing facilities.	Within 6 months of loan signing Zhejiang Glass shall present a prioritized plan, acceptable to IFC, for the implementation of automated glass handling.

#	Task Description	Indicator of Task Completion	Required Completion Date
	automated glass handling		
4	Prepare an audit of the land acquisition, compensation payment, resettlement and livelihood restoration procedures and outcomes for a sample of households affected by land acquisition for the Shaoxing facilities as well as BingHai and ChangXing Audit will reference IFC's policy for Involuntary Resettlement (OP 4.30). IFC to determine and discuss with Company remedial action as necessary. An independent audit of any remedial action undertaken will be required.	1) Audit report w/ recommendations 2) Company proposal for remedial actions as required 3) Audit of remedial action	1) Prior to IFC Board consideration 2) Prior to second disbursement 3) Project completion
Quinghai Facilities			
5	The power plant does not yet have automated monitoring of NOx emissions. The IFC/World Bank guideline for NOx is 750 mg/Ncm, and the latest guideline in China is in the order of 450-1100 mg/Ncm.	NOx emissions tested and the plant found in compliance with the limit. Low-NOx burners installed within 4 years from loan signing (if not already installed).	Initial tests by September 2006. If required a plan for correction, acceptable to IFC, by December 2006.
6	The power plant emission control does not yet have automated monitoring of dust emissions. Further the plant is officially designed for dust emissions of 200 mg/Ncm (according to the latest, more stringent Chinese regulation), while the World Bank guideline limit is 50 mg dust/Ncm for new plants (existing plants should as a minimum achieve dust emission levels below 100 mg/Ncm and should aim for 50 mg dust/Ncm. In rare cases emission levels up to 150 mg dust/Ncm may be	Dust emission measures and the plant's emission control optimized. Based on outcome the plant will need to be upgraded to meet the guidelines as follows.	Initial tests by September 2006. A plan, acceptable to IFC, for corrective actions based on the outcome of the measuring and optimization by December 2006 including the following: 1) If emissions exceed 200 mg dust/Ncm the filters will need to be replaced or reconfigured

#	Task Description	Indicator of Task Completion	Required Completion Date
	acceptable).		to achieve compliance with the limits for new plants within 18 months. 2) If emission is 100-200 mg dust/Ncm the filters will need to be upgraded within 4 years to achieve 100 mg dust/Ncm (or 150 mg dust/Ncm if the air shed quality permits and if so only until a second line is commissioned). 3) Achieve 100 mg dust/Ncm, no further action needed for existing units.
7	Ammonia losses are indicated at 8 kg/tons soda ash produced. It is expected that this can be brought down to 5 kg/tons soda ash produced, while the BREF note for new European plant indicate 2 kg/tons soda ash as appropriate. The possibility of further reduction is to be considered once the locations of the losses are found.	The plant has achieved optimal operation with lowest possible losses. There is a full knowledge of where the losses are	By December 2006 the sources of the ammonia losses should be identified and a plan, acceptable to IFC, for minimizing the losses prepared.
8	A house keeping, site cleanup, and visual improvement campaign is needed to bring the plant standard to acceptable levels comparable with the standard applied at the Zhejiang Glass manufacturing plants.	Unnecessary piles have been removed or leveled as appropriate. Spills have been cleaned up.	September 2006
9	The wastewater evaporation pond is to be contained behind a 22 meters high dam. This dam, currently under construction, will require a second independent check of the design to ensure its full and safe integrity.	Independent check of the design of the dam, by a consultant acceptable to IFC, has found the current dam design to be structurally sound, or recommendations of the	Independent report prepared by September 2006.

#	Task Description	Indicator of Task Completion	Required Completion Date
		independent consultant has been implemented in the design and construction.	
10	The wastewater evaporation pond is not secured by fencing.	A fence with the ability to keep small (rabbit) as well as big (camel) animals away from the pond has been constructed.	Completed within 12 months of signing of loan agreement.
11	Current practice at the salt lake result in piles of black salt deposits building up. After the establishment of the brine evaporation ponds these deposits need to be leveled to improve house keeping standard and give the visual appearance of an undisturbed lake surface.	Evaporation ponds in full production and the current and future piles of deposits has been leveled.	September 2007.
12	The lime stone deposit need to be managed to result in an acceptable landscape at the end of the extraction concession.	A limestone quarry management and closure plan, acceptable to IFC, prepared and implemented.	September 2007.
13	A health and safety awareness campaign, including enforcement of the use of Personal Protective Equipment (PPE) is needed. Accident frequencies close to 20 LDA/MMH experienced in the first six months of operation.	All plant personnel use PPE as appropriate and the accident frequency is in decline.	The campaign to be run as soon as possible in connection with the house keeping campaign and full enforcement of PPE use by mid-summer 2006. Accident frequencies reduced by 50% by end of 2006.
14	IFC will require the Company, in collaboration with the local government, to identify those households affected by the grasslands acquired for the project and confirm that the living standards of these households have not	1) Audit report w/ recommendations 2) Company proposal for	1) Prior to first disbursement. 2) Prior to second disbursement.

#	Task Description	Indicator of Task Completion	Required Completion Date
	declined as a result of loss of grassland. IFC encourage the Company to support local government efforts to promote the welfare of minority populations in Hai Xi Prefecture through (1) employment training; and (2) improving productivity of grass lands by engaging an international range land management specialist. Audit will reference IFC's policy for Involuntary Resettlement (OP 4.30). IFC to determine and agree with Company remedial action as necessary. An independent audit of any remedial action undertaken will be required.	remedial actions as required 3) Audit of remedial action	3) Project completion.