ENVIRONMENTAL AND SOCIAL ACTION PLAN

SENJ SANT LLC, MONGOLIA

No.	Environmental Action	Environmental Risks / Benefits	Reference Standard (i.e. legislation / best practice)	Investment Needs / Resources	Target Date	Key Performance Indicator	Comment
1 Actions at construction stage and into operational stage where relevant:							
1.0	Implement fully local EIA and ESIA supplementary document, prepared by WSP and issued on the 29 August 2012. Ensure full compliance with National legislation and the EBRD's Performance Requirements.		EBRD, National requirements.				
1.1	Establish corporate policy and procedures for management of contractor environmental, occupational health and safety, and social performance during construction, operation and maintenance activities, to include (as a minimum): 1. An induction process. 2. Inclusion of appropriate	Improved health & safety and environmental performance in operations and construction.	Best practice. EBRD PR1. EBRD PR2.	Internal Resource.	August 2012.	Sub-contractor training and accident records. Safe systems of working records. Annual reporting to EBRD on KPIs and safety	

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	action plans and other legal requirements in contracts, including requirement for staff/management training, safe systems of work implementation, including method statements and the correct use of PPE. 3. Assignment of clear responsibilities within Senj Sant LLC for contractor oversight. 4. Regular inspections of contractors working area. Regular health & safety contractor performance reports including corrective actions. 5. Verification of training and professional credentials for contractor environmental and occupational health and safety managers and staff. 6. Availability and use of the Grievance					performance.	

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	procedure for the workforce and all contractors, in order for open reporting of safety concerns. 7. Monthly internal reporting against KPIs.						
1.2	Implement the Stakeholder Engagement Plan (SEP) including a grievance mechanism - to ensure that for future investments and operations, such a plan can be used to engage fully with stakeholders and a grievance form can be used by workers and other stakeholders alike. Assign responsible manager(s) for stakeholder engagement and management of grievances. Full implementation of the formal grievance mechanism (contained in the SEP) for receiving and responding to community grievances.	Building and maintaining trust in the host community.	Best international management practices. EBRD PR10.	Internal resource / nominated responsibility.	August 2012 and on going	Use of a Stakeholder Engagement Plan for major changes planned by Senj Sant LLC and grievance forms as required. Annual report to include information on grievances.	There is a need to report information on grievances and responses, to senior management (monthly) and to EBRD on a quarterly basis.
1.3	Prepare and submit reports	Monitoring of	EBRD PR1.	Internal	Annually to	Submission of	Reporting to

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	on the status of this Environmental & Social Action Plan implementation and environmental and social performance, including resolution of grievances.	environmental performance.		resource.	EBRD Grievance resolution – to 'grievance reporter' after assessment of grievance.	reports on environmental, occupational health and safety, and social (EHSS) performance.	EBRD at all projects stages, including construction and operational stages.
1.4	Assign a responsible manager to coordinate activities to ensure execution of the project in compliance with the EBRD's Environmental and Social Policy and the requirements of the ESAP, ESMMP and SEP requirements. Such person shall demonstrate relevant knowledge and capacity in environmental, health and safety issues and understanding of the EBRD's requirements. If a single individual cannot be found to also adequately cover social issues, then a separate appointment must be made.	Improved health & safety and environmental performance in operations and construction.	Best practice. EBRD PR1. EBRD PR2.	Internal resource.	Prior to construction commencement.		
1.5	New Environmental and social supplementary information disclosure and public consultations in	Open disclosure of accurate information. Increased	EBRD PR10.	Internal resource and / external consultancy	In line with the planned consultation and disclosure	Consultation and disclosure completed in	

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	accordance to EBRD A category requirements.	knowledge of the project within local population. Input of information from stakeholders.		support.	timetable in the SEP. Public consultation and open meeting sessions within 60 days of the initial disclosure of the ESIA.	line with SEP.	
1.6	Full implementation of the Environmental and Social Supplementary Information recommendations and ESMMP. A specific management plan for the potential community health and safety impacts and concerns must be developed.	Mitigate and minimise potential environmental impacts.	EBRD PR1 EBRD PR4	Internal resource and / external consultancy support.	Prior to construction.	Management plans in place and operation. Records maintained.	The plan should be submitted to EBRD for review. The plan should be maintained and should identify potential impact areas and management responses for the construction, operations phases. In addition, in relation to induced in-migration,. a gender sensitivity analysis needs to be included.
1.7	Construct an extension to the existing natural	Reduced noise and visual	EBRD PR4.	Construction contractor.	Prior to completion of	Embankment in place as per	

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	embankment along the western boundary of the site to provide visual and acoustic screening. To include appropriate landscaping.	impact on the local community.			construction earthworks stage.	facility design.	
1.8	Consult with the Institute of Archaeology of the Mongolian Academy of Science to undertake a detailed phased assessment of the potential for archaeological assets in the vicinity of the Proposed Development. An archaeology management plan, based on the detailed assessment will be prepared should the initial assessment of the Institute identify the need in the event of archaeological assets be encountered during the construction and operational phases. The Company will maintain a chance find system in place throughout the construction process.	Protection of archaeology assets.	Mongolian Legislation. EBRD PR8.	Internal / Resources.	Prior to construction.	Consultation response. Submit copies of detailed phased archaeological assessment report and (if required) subsequent Archaeology Management Plan to EBRD.	Actions taken as per consultation with the authorities, including excavation or formal exemption from this requirement. Record to be maintained.

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1.9	Preparation of a sensitive lighting design strategy which will take into account the surrounding sensitivities.	Minimise light pollution and effect on Urgun Soum and local ecology.	EBRD PR3. EBRD PR6.	Internal resource and / or external consultancy support.	Design finalisation.	Design specifications.	Design mitigation as detailed in the Lighting section of the NTS and light chapter of the Supplementary Information Report.
1.10	Preparation of a detailed quarry development & rehabilitation plan.	Manage, monitor and enhance local biodiversity.	EBRD PR6.	Internal resource.	In place at least one year prior to commissioning.	Quarry rehabilitation and management plan document. Provision of information relating to on-going quarry rehabilitation.	To be published in both English and Mongolian and available in hard copy in locations in both the Senj and Sumbyer Bag and at the Aimag Government in Sainshand,
1.11	Undertake further surveys to monitor the presence of rare and notable species in the vicinity of the cement plant, quarry site and overhead power lines, water pipeline during the key seasons to cover breeding and migration, to ensure that mitigation measures developed are	Ensure the appropriateness of propose ecological mitigation measures.	EBRD PR6.	Internal resource and qualified ecologist / ornithologist and overseen by and international expert.	Scope of surveys to be developed and confirmed with EBRD by February 2013. Surveys to be conducted prior to construction during appropriate survey seasons.	Survey reports and documented evidence of implementation of appropriate mitigation measures. To be submitted to EBRD for review,	Scope of additional biodiversity surveys will be reviewed by third party ecological and ornithological specialists to be identified by EBRD. Monitoring of any

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	adequate. A number of multiple visits should be undertaken. Further surveys will be undertaken to monitor the presence of rare and notable species in the vicinity of the Shuvuun Khuuvur spring during the key seasons to cover breeding and migration. The biodiversity value of this feature will also be characterised to ensure that if this feature is impacted, adequate mitigation measures will be developed to ensure that there is no net loss of the feature, and a like for like replacement is provided.						mitigation measures to confirm appropriateness annually for a minimum of 5 years from commencement of construction.
1.12	Early installation of a wastewater treatment plant and water recovery system to ensure that the wastewater from construction works is treated and so that process related fresh water extraction volumes are	Sustainable water management.	EBRD PR6.	Internal resources and expenditure on wastewater treatment system.	Wastewater plant prior to construction commencement. Preventative maintenance	Plant in place, fully functional and operational in line with local discharge permit.	

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	minimised. Wastewater discharges to meet composition as defined in the BAT chapter of the ESIA. Ensure a full planned preventative maintenance system is implemented for all processes related to the water recovery and recirculation systems in the plant to ensure that operation on extended levels of fresh water is not required in case of plant breakdown.				systems (PPM) to be confirmed during design and implemented prior to plant commissioning.	PPM in place prior to commissioning.	
1.13	Further detailed hydrogeological assessment and robust groundwater modelling is required to an acceptable scope and standard to ensure that existing groundwater resource uncertainties are eliminated and the availability of groundwater resources to be used are fully proven and quantified. The nature of additional investigations	Minimisation of environmental impact.	EBRD PR6. EBRD PR4.	Internal resource and external specialist groundwater consultancy support.	Finalisation of designs and prior to construction commencement.	Assessment reports.	Scope of additional work and assessment reports will be reviewed by a third party groundwater specialist to be identified by EBRD.

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	should be in line with those identified within the Supplementary Assessment Report and the Non-Technical Summary, and take into account the staged sequence of further detailed assessment, including detailed assessment of the Northern and South Aquifers, and associated potential impacts on associated surface water features. The final design must fully demonstrate that adequate water will be provided for the operational phase of the plant, through the achievement of sustainable water abstractions, within recharge capacities and without impact on current surface water features.						
1.14	Fully design and implement an effective waste water treatment plant to manage all discharges from the plant operations, including process discharges and	Minimisation of environmental impact.	EU IPPC/ Industrial Emissions Directive.	Internal resource.	Finalisation of designs and prior to construction. Commencement.	Effluent composition monitoring results.	

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	discharges from the work camps and all offices / administration areas; ensure the effluent composition is aligned with BAT requirements. Ensure water is treated adequately to allow further use of the water for non potable purposes, such as dust suppression.						
1.15	Fully design and implement the coal fired power plant to include the following plant features and project requirements: • Undertake updated dispersion modelling using the latest ADMS or AERMOD software version, to assess the impact of the emissions (when the design parameters are finalised). Conduct stack height optimisation to ensure that	Minimisation of environmental impact. Effective use of resources and protection of air quality.	EU IPPC BAT for Combustion Guidance EBRD PR3 and PR6.	Costs for updated modelling. Costs to be budgeted for provision of required pollution control systems.	Finalisation of designs and prior to commencement of construction. Design details to be provided to EBRD for approval prior to any order being placed.	Compliant design in place and producing compliant emissions limit values.	Design to be submitted and approved by EBRD prior to order being made. A coal supply certificate showing low sulphur content of below 1.2% must be submitted to EBRD.

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	adequate stack height is provided to ensure that the impact of emissions from the coal fired power plant is does not result in a significant impact. • Implement a multi compartment bag filter system to reduce particulate emissions to 20mg / Nm3 and ensure that burst bag detection systems are in place. • Add the annual compliance monitoring of the coal fired plant into the schedule of emissions monitoring for the site. Conduct annual particulate monitoring and compare against the 20mg/Nm3 limit, using the monitoring						

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	techniques and from compliant emissions monitoring portals, from the ISO and EN standards defined in the BAT review (Supplementary Information Report Appendix 3.1) • Ensure that a low sulphur coal (less than 1.2% sulphur content) supply is sourced and obtain evidence of low sulphur content from the supplier. • Implement automated combustion control systems, to ensure the correct balance of excess air to manage NOx levels while maintaining fully effective combustion and coal burnout, to also reduce carbon						

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	monoxide emissions. • Implement a waste management plan for the sealed silo storage and effective disposal of bottom ash and fly ash. • Upon commissioning, undertake a feasibility assessment of the potential to utilise the ash as alternative additive raw material within the cement blend.						
1.16	Ensure that the final detailed design of the cement and supplementary coal boiler plant will include all of the design performance requirements stated in section 2 of this ESAP. Ensure that a full risk assessment is undertaken of the potential explosive	Minimisation of environmental impact.	EU IPPC BREF for Cement Production (EU IPPC Combustion Guidance for general information for the power unit / small combustion plants).	Resources for the implementation of a fully compliant plant.	At point of detailed design completion. A report to EBRD detailing all design features and how each relevant item in this ESAP will be complied with.	Plant designed to BAT / ATEX standards in line with the operational requirements within Section 2 of this ESAP	Design to be submitted and approved by EBRD prior to order being made.

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	atmospheres risk in relation to the coal handling / pulverisation and coal injection units. Classify the hazardous areas according to the ATEX zoning systems and provide ignition protection according to the output of the risk assessment.		EU ATEX Directive 95 for provision of protection equipment and ATEX 137 for general safety arrangements for worker protection.				
1.17	Provision of the new village well for Urgun Settlement. Working with the state authority who will be responsible for management of the new water source, to ensure that: - The well resource will provide an adequate sustainable water yield for the village including the potential increase in local population. - The full testing of water quality, including	Provision of adequate clean water to the village.	EBRD PR6.	Resources for the provision of the well.	Prior to the commencement of abstraction from the southern aquifer or any change to the water provision from the Senjit Khudag Well.	New effective water supply in place.	

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	assessment of identified hydrocarbon contamination identified in the older village wells. - Provision of a water treatment system (if necessary) to provide water of full potable quality. - Development of a formal agreement for the responsibility for the operational management of the well in the future by the state authority.						
1.18	Maintain records of accidents, incidents, near misses and minor accidents. These records should also include contractor safety performance.	Effective Health and Safety management.	EBRD PR2.	Internal resource.	From the commencement of the construction phase.	Include the requirement in the accident reporting procedure and provide training to employees. Accidents and near miss reports / records.	

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1.19	Carry out an assessment in all work areas to determine the safety signage that is necessary to inform all persons entering the work area of the health and safety risks and rules.	Effective Health and Safety management.	EBRD PR 2 EU Directive 92/58/EEC Safety Signs	Internal resource and / or external consultancy support.	Within one month of plant start-up.	Documented review of health and safety risk assessments and required signage.	
1.20	Develop and implement a policy on Personal Protective Equipment (PPE) assessment and selection that involves workers. Ensure that the workers feedback is taken into account before PPE is purchased.	Effective Health and Safety management.	EBRD PR 2 EU Directive 89/656/EEC – PPE.	Internal resource and / or external consultancy support.	Prior to plant start-up.	PPE action plan and policy.	
1.21	The company shall ensure that all new work equipment introduced into any workplace has been adequately assessed and meets the essential health and safety requirements.	Effective Health and Safety management.	EBRD PR 2 EU Directive 89/655/EEC - Work Equipment.	Internal Resource.	Prior to the finalisation of the plant design stage.		
1.22	All visitors / contractors to the site should receive a Health & Safety induction.	Effective Health and Safety management.	EBRD PR2.	Internal resource.	From the start of construction and through to operations.	Records of inductions.	
1.23	Develop a site level employment policy to cover:	Effective management of	Best practice	Internal resource.	Prior to the start of construction.	Provide new Policy. Submit	

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	discrimination, equal opportunity, employment of young persons, wages (wage level, normal and overtime), working hours, benefits, grievance mechanism for workers, trade union recognition, collective bargaining, health and safety etc. The policy should cover compliance requirements on issues such as corruption, bribery, payments, gifts and benefits, discriminatory actions, harassment, violations, human rights amongst others is in place	labour requirements. Fair employment conditions.	EBRD PR2 Mongolian legislation on labour standards and business practices.			to EBRD for review.	
1.24	Undertake noise mapping and aim to reduce noise levels within production facilities.	Reduced noise levels in workplace.	Worker protection / EU IPPC standards – Noise at work. EBRD PR2 and PR4.	Internal resource or external consultancy support.	Once the site is operational – expected 2014.	No. of exceedances of noise limit values.	
1.25	Road traffic noise levels for properties within 50 m of existing and the new roads should be assessed to identify where the free-field noise level at the boundary	Exposure to elevated noise levels.	Best practice. EBRD PR2. EBRD PR4.	External consultancy support.	During the first month of commencing construction.	Noise monitoring report.	

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	of residential property may be raised to LAeq,T 63 dB or more with a contribution of at least 1 dB attributable to traffic associated with the proposed development.						
1.26	Full implementation of the formal Land Acquisition Framework.	Building and maintaining trust in the host community. Avoidance of impact on current land users.	EBRD PR5.	Internal resource and possibly external consultancy support.	Prior to construction.	Framework in place and being used.	The framework must specifically address any physical and economic displacement at the start of during the project. This is potentially applicable to herders and their use of the area for grazing pasture or water resources.
1.27	Preparation of a capacity building plan, focused on local population skills development and training plan. Development of a specific training delivery programme in cooperation with a local training provider such as the colleges in Sainshand.	Building and maintaining trust in the host community. Maximising local economic and social development benefit for the project.	EBRD PR2.	Internal resources.	Prior to construction,	Plan in place and being implemented. Number of additionally qualified people should be measure. Jobs created and filled by	A baseline survey of the current education levels in the local population must be undertaken and documented for future comparison.

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						local population, as a result of planned training actions.	
1.28	Implementation of mitigation arrangements (as specified in Chapter 6 of the Supplementary Information Report) during construction of the water pipeline to the Northern Aquifer. This will ensure that disturbance of local temporary water features is minimised.	Avoidance of impact on current land and water resource users.	EBRD PR5 and PR6.	Good construction management: resources of construction contractor.	Plan implementation during construction.	Mitigation plan implemented with evidence. Plan to be submitted to EBRD prior to construction.	Arrangements to include backfilling of pipeline excavations as the pipe is laid and ensuring that the land is backfilled with arisings to current land profile, to avoid creation of new water channels.
1.29	Specific consultation with local residents from Urgan Village who use the local hilltop shrine. Consultation to understand usual route of accessing the shrine and this shall be taken into account when finalising the design of the railway spur and conveyor belt, to ensure that adequate arrangements for public crossing is provided.	Building and maintaining trust in the host community. Avoidance of impact on current land users.	EBRD PR5, PR8 and PR10.	Investment to ensure that adequate crossing provisions is in place.	Prior to design finalisation.		The arrangements must seek to avoid making the access route to the hilltop shrines significant longer.

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1.30	Full formal consultation with the local herder groups when the strategy for water supply is finalised. Specific consultation commitments as detailed in the SEP and the formalised steps detailed in the Land Acquisition Framework must be followed to understand the current herder use of the utilised resources, potential impact on water availability or access, requirement for the nomadic herders to move to alternative resources, pressure on these alternative resources and the potential provision of compensatory measures if required.	Building and maintaining trust in the host community. Avoidance of impact on current land users.	EBRD PR5 and PR10.	Investment to potentially provide compensatory measures if access to water resources is changed or herders need to change to other pasture areas.	Prior to finalisation of the water supply strategy and associated technical studies define in condition 1.14.		Partnering with an expert group such as The Centre for Policy Research or the Mongolian Society for Rangeland Management is recommended to further understand impacts on herders and possible mitigation measures and thus help implement this action item.
1.31	Development and implementation of a detailed plan to ensure the effective management of the construction and operational phase workcamps, including: - Compliance with the EBRD/IFC (2009)	Effective management of labour requirements. Fair employment conditions. Building and maintaining trust	EBRD PR2 and the EBRD/IFC (2009) Guidance Note on *'Workers Accommodation: Processes and Standards'*.	Internal resources	Prior to construction starting (construction phase camp) and prior to operational phase (operational	Adequate arrangements in place and effective interaction with the local community. Plan to be submitted to	

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	Guidance Note on 'Workers Accommodation: Processes and Standards'. This must include implementation of all arrangements including adequate space, heating, lighting, ventilation, sanitation (including water and wastewater treatment, cooking, washing and cleaning facilities, along with separate accommodation for male and female workers. - Development and full implementation of a construction worker code of conduct to restrict and manage interaction with the local community.	in the host community.			worker camp).	EBRD.	

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2 **Actions Relevant to the Commissioning and Operational Stage of the Project (note, relevant construction phase actions remain in place)**							
2.1	Develop environmental and safety management systems equivalent to ISO 14001 and OHSAS 18001. As part of the environmental management system implementation, develop and deliver a training programme on environmental management throughout the group. Develop KPIs for the project and publish a CSR report according to the WBCSD / Cement Sustainability Initiative Guidelines, to include independent verification of the content.	Monitor and target to improve efficiency.	Best international management practices. EBRD PR1.	Internal resource and / or external consultancy support.	Prior to operations. Certification for ISO14001 and OHSAS 18001 to be achieved within 2years of operation. Publish the CSR report within 3 years of operation.	EHS systems developed and maintained in line with international standards (ISO 14001, OHSAS 18001).	
2.2	Produce and implement a waste management plan, particularly for storage and disposal of hazardous waste (oils, fuels and chemicals, ash from the power plant, etc). The plan should maximise reuse of waste material, either on-site or off-site and be labelled correctly.	Ensure that waste is stored appropriately in the correct labelled container.	Best practice. EBRD PR3.	Internal resource.	End of 2014.	Implementation and regular audit of waste management plan.	

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2.3		Need to ensure appropriate management of the quarry and future restoration.	EBR D, best practice, Lafarge corporate standards.	Own/external.	Within 2 years of commissioning the plant.	Report.	
2.4	Implement Lafarge corporate standards and guidelines on biodiversity and EHS management.	Ensure best practices are met.	Lafarge.	Internal.	From plant operation.		
2.5	Develop an emergency response plan / procedures for the facility prior to the commencement of operations.	Effective preparedness for emergency situations.	EBRD PR1, PR3 & PR4. EU IPPC/ Industrial Emissions standards.	Internal resource.	Appropriate plan for the construction stage. Full review and redevelopment for the operational phase.	Emergency response plan / procedure.	Appropriate emergency plan prior to commencement of the construction stage. A full review (by the appropriate national regulator) of the plan is required prior to the operational phase. The plan will require review and update on a regular basis.
2.6	Incorporate BAT	Plant efficiency	EU IPPC/	Internal	Prior to design	Assessment	BAT review

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	requirements in the detailed design for the facility for phase two of the project. Ensure operation of the plant in accordance to IED BAT Requirements. Conduct a full review covering the cement plant and the coal fired boiler plant, of the implementation of BAT operational controls, emission levels and plant efficiency / performance. Make process adjustments to ensure that BAT levels can be constantly achieved.	and minimisation of environmental impact.	Industrial Emissions Directive. EBRD PR3.	resource and / or external consultancy support.	finalisation. Full BAT delivery reassessment within 2 years, with report to EBRD on the outcome of the review and the adjustments made, if required.	against BAT.	undertaken in discussion with principal designer prior to final tender specification stage. Report to EBRD required with all emissions and relevant process KPI data.
2.7	Ensure there is adequate bunding for storage tanks at the new facility. It should be ensured that the secondary containment can hold 25% of the aggregate volume of the tanks or as a minimum 110% of the largest storage tank.	Minimisation of environmental impact.	EU IPPC/ Industrial Emissions Directive.	Internal resource.	Design finalisation.	Design specifications.	
2.8	Ensure storage tanks are fitted with high level alarms and develop a testing	Minimisation of environmental impact.	EU IPPC/ Industrial Emissions.	Internal resource.	Design finalisation.	Design specifications.	

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	schedule.		Directive				
2.9	A storage tank and associate pipework inspection schedule will be developed.	Minimisation of environmental impact.	EU IPPC/ Industrial Emissions Directive.	Internal resource.	Design finalisation.	Design specifications.	
2.10	Carry out an assessment of all machinery in work areas to determine if workers are exposed to any moving parts. Following the assessment introduce a programme of action to retrospectively fit guarding to remove the risk to workers.	Effective Health and Safety management.	EBRD PR 2 EU Directive 98/37/EC – Machinery.	Internal resource and / or external consultancy support.	Within one month of plant start-up.	Accident and near miss records.	
2.11	Undertake an environmental assessment in order to identify the potential for alternative fuel use.	Minimisation of environmental impact.	EBRD PR3 EBRD PR6 EU IPPC / Industrial Emissions Directive.	Internal resource / external consultancy support.	First assessment prior to commissioning. Annually, by year end.	Use of alternative fuels.	Annual report to the EBRD.
2.12	Where alternative fuels are identified develop a fuel specification to include the fuel source (e.g. separated household domestic waste). Restrictions on halogen and metal content of the fuel will be in place.	Minimisation of environmental impact.	EU IPPC/ Industrial Emissions Directive.	Internal resource / external consultancy support.	First assessment prior to commissioning. Annually, by year end.	Associated carbon reduction achieved.	Specification defined prior to use.

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	If Alternative fuels are used ensure full compliance with the IED BAT Reference documents for emission, as well as develop an EIA for the alternative fuel operation, including waste management, transport assessment of adequacy of equipment and mitigating measures. Ensure full public consultation prior to use of alternative fuels.						
2.13	Install low NO_x burners on all significant combustion gas sources, to include the burner on the kiln and preheater/precalciner.	Minimisation of air emissions.	EU IPPC/ Industrial Emissions Directive.	Internal Resource.	Set requirement in design specification prior to tendering.	Low NO_x burners to be in place on required equipment.	
2.14	Carry out a detailed appraisal of safety requirements for the storage of ammonia / urea for stage 2 of the project. Report on the arrangements for safe storage in line with international best practice.	Minimisation of environmental impact.	EBRD PR3 Best Practice.	Internal resource / external consultancy support.	Set requirement in design specification prior to tendering.	Documented review of safe storage requirements.	
2.15	If raw material use or future fuel use (i.e. waste derived	Minimisation of environmental	EBRD PR3 EU IPPC/	Internal resource /	Assessment prior to stage 2 design	Continued achievement of	Report to EBRD prior to stage 2

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	fuel) means the quoted emission limit values of 200mg/Nm^3 for SO_x cannot be achieved without abatement a full documented options appraisal to be developed for flue gas desulphurisation and report on the recommended approach for implementation. A specification report will be developed prior to the finalised design of stage two.	impact.	Industrial Emissions Directive.	external consultancy.	finalisation.	the 200mg/Nm3 Emission levels for SOx.	design finalisation.
2.16	Fit continuous emissions monitoring systems on key release points, to include the main pre-heater emissions stack (to include kiln emissions), clinker cooler stack and cement mill stack. Monitoring to include combustion gases, where present, and particulates. There should be annual periodic monitoring for all other key emissions as	Monitoring of environmental performance.	EBRD PR3 EU IPPC/ Industrial Emissions Directive.	Internal resource.	In place prior to commissioning.	Documented procedure in place and records of responses (log of process abnormal conditions and responses taken).	Records to be maintained on site in case of future inspection.

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	defined in the BAT review, to include metal groups, acid gases and dioxins / furans. This should be increased in frequency during commissioning to fully demonstrate that emission levels can be delivered consistently. Develop and implement a specific procedure for the management of any responses within the CEMs system i.e. breach of proposed emission limit values.						
2.17	Develop a maintenance and calibration schedule for the management of CEMs.	Equipment efficiency and accuracy.	ISO standards according to specific equipment installed.	Internal resources / external contractor.	In place prior to commissioning.	Documented procedure in place and records of calibration. Calibration schedule to be aligned with recommended manufacturers frequency.	Records to be maintained on site in case of future inspection.
2.18	Develop and implement a procedure for the maintenance of the effluent	Minimisation of environmental impact.	Mongolian effluent discharge permit.	Internal resources / external	In place prior to commissioning.	Documented procedure in place and	Records to be maintained on site in case of

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	treatment system and associated pumps and sumps.			contractor.		records of maintenance maintained. Compliance with discharge permit conditions set in the Mongolian Permit.	future inspection.
2.19	Ensure that equipment is installed and operated so that the plant meets the following emission levels: - 800 mg/Nm3 of NOx at project stage 1 and 500 mg/Nm3 at project stage 2 (SNCR will be required at stage 2) - Less than 20mg/Nm3 of particulate emission. - 200 mg/Nm3 of oxides of sulphur. - Other emissions (eg metals, HF / HCl) as defined in	Minimisation of air emissions. Equipment efficiency.	EU IPPC / Industrial Emissions Directive.	Internal resource Expenditure for SNCR implementation.	In place prior to commissioning.	Documented procedure in place and records of maintenance maintained.	Records to be maintained on site in case of future inspection.

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	the BAT review of the ESIA document. Develop and maintain a procedure for the management and maintenance for the dust collection system (i.e. bag filter). This will include arrangements for the return of collected dust into the process. Develop and implement a filter inspection and maintenance programme. Develop a procedure for abnormal situations / emergency conditions response (i.e. burst bag detection).						
2.20	To sign up to the World Business Council for Sustainable Development's 'Cement Sustainability Initiate' within 5 years of operation.	Transparency on performance and operation to best international practices.	WBCSD Sctor Criteria for Cement (Cement Sustainability Initiative).	Internal resource.	Within 5 years of operation of the plant.	WBCSD signatory in place.	
2.21	Implementation of an energy management system in line with the	Effective management of resources.	EBRD PR 3 and PR6.	Internal resources.	Within 3 years of operation of the plant for full	Certification in place to the ISO50001	

No.	Environmental Action	Environmental Risks / Benefits	Reference Standard (i.e. legislation / best practice)	Investment Needs / Resources	Target Date	Key Performance Indicator	Comment
	requirements of the ISO50001 standard, which will include a strategy for GHG management, to include all fuel sources and the coal fired power unit.				development and certification.	standard.	
2.22	Every 5 years undertake a full water audit, including assessment of groundwater water availability and impacts associated with current use.	Use water audit to asses water reduction methods, and review water use. Also assess if the current use is sustainable terms of biodiversity and human habitat. If necessary develop mitigation measures.	EBRD PR 3, 6 and best practice.	External.	Every 5 years, starting 2 years after commissioning.		Scope of audit to be agreed with Lenders and shareholders.