Draft ESAP for Biogasenergo Project *Update: 25 Apr 2013*

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1.	**Corporate Level and Pre-Construction**			
1.1	Monitor project performance, prepare and submit reports on status of ESAP implementation and environmental and social performance, including resolution of grievances, at agreed timescales and for an agreed period (likely to be a number of years).	EBRD PR1	Each six months during construction, annually thereafter	Submission of reports on environmental, occupational health and safety, and social (ESHS) performance, demonstrating that predicted environmental and social effects are being satisfactorily managed
1.2	Achieve and maintain environmental and social management systems based on principles of ISO 14001.	Best international management practices PR1	By 2014	Include in ESHS report the status of environmental and social management systems
1.3	Achieve and maintain an occupational health and safety (OHS) management system based on principles of OHSAS 18001 or equivalent.	Best international management practices PR2	By 2014	Include in ESHS report the status of OHS management systems
1.4	Appoint responsible manager(s) for environmental and occupational health and safety issues. Train foremen and appropriate staff on each construction team and ensure operations meet the relevant requirements of this ESAP and, as needed, the requirements of EBRD's Performance Requirements.	Best international management practices PR1	Throughout construction and operation	- Appointment of corporate ESHS manager - Training of foremen and other staff - Ultimate goal: full compliance with ESAP - Include in ESHS report updates on appointment(s) and training
1.5	Obtain all required permits for the new projects and comply with permit requirements,	National regulatory requirements	Prior to construction and during	- Identify permits required and received in ESHS reports;

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	including: a. Construction permit (Construction Phase) b. Air emissions (Operation Phase) c. Waste disposal (Operation Phase) d. Water use and wastewater discharge (Operation Phase)	PR1	operation, as applicable	- Report on compliance in ESHS reports.
1.6	Prepare and implement a Stakeholder Engagement Plan (SEP), including a Grievance Mechanism; inform stakeholders of activities and progress, and receive and respond to grievances.	PR10	2013 and throughout project	Review and approval of SEP by EBRD Information disclosure through suitable means, to be agreed with EBRD Include in ESHS report: - details on grievances and resolution; - consultations and other outreach to the community, including local environmental commission and competent authorities.
2.	**Construction Phase**			
2.1	Establish corporate policy and procedures for oversight of contractor ESHS performance during construction, to include (at a minimum): - Inclusion of appropriate ESAP and other legal requirements in contracts, including requirement for staff/management training;	Best international management practices PR1 PR2	Prior to, and during construction	ESHS reports to EBRD on: - Programme description; - Highlights of performance (appointments, inspections, etc.); - Training; - Contractor summaries (both at contractor level and compiled project

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	- Assignment of clear responsibilities within developer for contractor oversight of the projects; - Regular inspections/monitoring of sites and contractors' construction camps; - Contractor reports on performance sufficient to allow inclusion of data in ESHS reports to the Bank, and to allow developer to determine if corrective actions are needed; - Verification of training and professional credentials for contractor environmental and OHS managers and staff.			level) in terms of environmental and OHS performance summaries.
2.2	As part of policy development under item 2.1 above, develop and implement a contractor management plan for the project, and procedures ensuring contractor's compliance with EBRD PR 2 and Ukrainian labour law.	PR2	Prior to contracting	- Preparation and implementation of plan; - Report on contractors' compliance and oversight results.
2.3	Prepare and implement construction management plan for the project to mitigate general construction impacts, including: a. Noise monitoring and mitigation (controls on construction hours, vehicles and equipment used, routes and timing for deliveries). b. Air emissions: - Controls on vehicle emissions (material deliveries and on-site plant movements); - Control dust emissions in dry periods by	National regulatory requirements PR1, PR2, PR3, PR4	Prior to, and during construction	- Construction management plan prepared, approved and implemented; - Compliance with national requirements and standards; - Contracts with licensed contractors (waste disposal); - ESHS reports to EBRD.

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	considerate siting and access routes, and where necessary using water or other dust suppression methods on roads and construction areas that may generate dust; - Ensure all vehicles carrying spoil and all stockpiles are covered; - Switch vehicles and equipment off when not in use; - Keep all motorised equipment and vehicles well-maintained to reduce emissions. c. Waste generation, storage and disposal: - Procedures for proper handling of all waste generated at the construction site (including hazardous and non-hazardous waste); - Methods to verify proper off-site management of related wastes by contract waste managers; - Measures to minimise waste generation and maximise reuse and recycling. d. Increased traffic.			
2.4	Develop and implement an Occupational Health and Safety (OHS) plan to guide all project-related activities on the project site(s) during construction and operation. Also require contractor plan/compliance. Requirements to include: - Job- and task-specific hazard analysis and	National requirements Best international practices PR2, PR4	Plan in place prior to construction (for contractors, prior to site operations). Throughout construction and operation.	- Regulatory compliance; - Preparation and implementation of OHS plans for projects; - Review and approval of contractor OHS plans; - Include in ESHS reports to Bank data on performance by developer and contractors (hours worked,

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	controls for developer and contractor's activities; - Provision of Personal Protection Equipment (PPE), requirements for use of PPE, and enforcement of PPE use; - Safety training for all personnel, covering hazards for their jobs; - Review and approval of contractors OHS plans, to meet same standards as developer's plan; - Oversight of contractor OHS implementation, including mandatory reporting; - Recording incident statistics, including total work hours.			incidents/accidents, lost time, etc.).
2.5	Implement measures to prevent / reduce / control soil and groundwater contamination as a result of spills or seepage of fuel, lubricants and other chemicals: - Store fuels and oils in containers with bunded secondary containment with 110% capacity; - Ensure drip-trays are in place where fuels or oils are stored or used; - Identify a designated bunded refuelling location; - Educate drivers and equipment operators in proper fuel management, including clean-up of spills on- and off-site; - Make spill kits available, and use if necessary to clean up oil spills before contaminants can	National regulatory requirements Best international practices PR3	Throughout construction and operation	- Mitigation arrangements in place for potential adverse impacts of soil and groundwater contamination; - Incidence of spills/leakage as documented by internal/external audits and regulatory notices.

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	enter the ground or watercourses.			
2.6	Make provisions to maximise opportunities for local employment and suppliers in project construction and subsequent operation.	PR1, PR4, PR10	Prior to, and throughout construction and operation	- Include data on use of local labour and suppliers in ESHS reports; - No comlpaints from local residents.
3.	**Operation Phase**			
3.1	Maintain full compliance of ongoing company operations on ESHS issues, including: a. Air emissions; b. Solid waste generation and disposal, including safe disposal of ash; c. Water use and wastewater discharge.	National regulatory requirements PR1	Ongoing	Full ESHS compliance documented by internal or external audits
3.2	Develop and implement a sustainable wood procurement policy, stating that the Company will only purchase wood feedstock, which is of legal origin, does not originate from protected areas or from high conservation value forests and is sourced from forests managed in accordance with the principles of sustainable forest management (e.g. certified according to FSC or PEFC systems if available).	PR1, PR6	Prior to commissioning and throughout operation	- Policy developed and approved; - Percentage of wood feedstock obtained from FSC or PEFC certified forests; - Reporting on the Policy implementation included in ESHS reports to EBRD.
3.3	Develop and implement comprehensive system for monitoring and prevention of potential radiological contamination of feedstock (as some	National regulatory requirements PR1	Prior to commissioning and throughout	- Radiological monitoring system in place; - Regulatory compliance.

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	of the areas from where the feedstock will be sourced may be contaminated by Chernobyl fallout). The radiological monitoring measures should be presented in a separate dedicated document.		operation	
3.4	Implement mitigation measures and best management practices to prevent / reduce / control air pollution from biomass incineration process and storage. Emissions controls during operation of biomass plant should ensure compliance with Ukrainian and EU standards, including consideration of: - Particulate matter control (compliance with 50mg/m^3 national standard), such as installation of a multi-cyclone, electrostatic precipitator or fabric filter; - Nitrogen Oxide (NO_x) control (compliance with 500 mg/m^3 national standard), such as a Selective Non-Catalytic Removal System; and potentially control on Sulphur (SO_2) if applicable (compliance with national Standard 500 mg/m^3); - Regular Emissions Monitoring equipment; - Controls on dust and methane generated from storage and processing of biomass.	Order of the Ministry of Environment "About Approval of Norms for Air Emissions from Stationary Sources" No 309; EU Large Combustion Plants Directive 2001/80/EC; Best Available Techniques Reference Document for Large Combustion Plants; PR3, PR4	Prior to commissioning, and during operation	- National regulatory compliance, including monitoring data on concentrations of air pollutants at the emission point and at SPZ boundary (300m); - Minimal air pollution (including dust); - No complaints from local residents.
3.5	Develop comprehensive waste management plans (generation, storage and disposal) for the	National regulatory requirements	Prior to commissioning, and	- Preparation and implementation of waste management plans;

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	project. The plans should include: - Preparation of annual waste generation limits and disposal permit; - Procedures for proper handling and segregation of all waste generated (including hazardous and non-hazardous waste); - Methods to verify proper off-site management/disposal of related wastes by licensed contractor waste managers; - Measures to minimise waste generation and maximise reuse and recycling; - Dedicated ash handling procedures (as presented in Section 3.6 below).	Best international practices PR1, PR3	during operation	- Annual waste generation limits and disposal permit; - Compliance with national requirements; - Waste disposal contracts with licensed contractors; - Reporting on plan preparation and waste management compliance status in ESHS report.
3.6	Develop and implement special procedures dedicated to ash handling and disposal, including compliance with requirements on radioactive waste if applicable. Further utilisation of ash generated as part of the biomass incineration process should be very carefully assessed by competent parties as it may exceed the acceptable radiological levels. If it does, the ash should be treated as radioactive waste with all applicable radiological requirements.	National regulatory requirements PR1, PR3	Prior to commissioning, and during operation	- Ash handling procedures developed and implemented; - Regulatory compliance; - Contracts indicating the disposal of ash.
3.7	Ensure appropriate containment and disposal of wastewater, including treatment of sanitary water, reuse of process cooling water, and treatment of contaminated storm water.	National regulatory requirements Best international practices PR3	Throughout construction and operation	- Regulatory compliance; - Percentage of water reused in the production process; - Reduction in the risk of water / land

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	Take measures to prevent run-off of potentially polluting materials to the soil and groundwater, including: - Keep hard-standing areas and road surfaces clean from mud and oil build up; - Store hazardous and potentially polluting materials in bunded, secure, areas away from watercourse and pathways to watercourses (e.g. drains, ditches).			pollution and impacts on the environment.
3.8	Develop and implement a traffic management plan to mitigate an increased local road traffic due to transportation of feedstock to the biomass plant, and its byproducts , including: - Careful consideration and consultation should be given to the agreement of delivery routes to the site area to avoid close proximity to sensitive receptors (e.g. residences, hospitals and schools); - Design routes so as to avoid unnecessary conflict with other road users, schools, hospitals, and other areas where there may be heavy bicycle, pedestrian or child use; - Notify communities and place signs on public roads and in the vicinity of the site; - Monitor noise levels from project vehicle traffic in the residential areas; - Confine road traffic to daylight hours if	Best international practices PR4	Throughout construction and operation	- Traffic management plan prepared and implemented; - Noise levels from project traffic monitored in residential areas; - Include in ESHS reports data on all accidents, including traffic-related incidents/accidents.

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	possible; - Establish and enforce strict delivery times; - Establish and enforce speed limits on- and off-site; - Provide training to all drivers, enforce compliance with traffic plan.			
3.9	Developer to ensure that the project team has a high level of preparedness for emergencies and major incidents (e.g. explosion, fire, earthquake, etc.), and that an appropriate emergency plans is in place and understood by developer and contractor staff. Include the local community in the emergency plan.	National regulatory requirements PR3, PR4	Throughout construction and operation	- Potential major incidents identified and avoided through emergency planning; - if major incidents occur, these are handled according to the planned procedures.
4.	**Decommissioning Phase**			
4.1	Prepare and implement a decommissioning plan to dispose off any waste, residues or used equipment, including those potentially contaminated with radioactivity, in an environmentally sound manner.	Best international practices PR1, PR3	Prior to, and during decommissioning phase	Decommissioning plan prepared and implemented.