Biogasenergo project non-technical summary

1 Introduction

This document provides a non-technical overview of Biogasenergo project to construct biomass power plant near Ivankiv Town, Kyiv Oblast of Ukraine. It also presents a summary of potential environmental and social impacts and other environmental and social issues relevant to the proposed activities. Appropriate measures to mitigate key adverse environmental and social effects that may arise during project construction and operation are also provided in *Table 1* at the end of this document.

This Non-Technical Summary (NTS) document will be placed in the locations shown below for public disclosure.
Environmental and social documents will be available for review during normal business hours at the following location:

- *Biogasenergo LLC company office*
  Address: 77A Vladimirskaya str., office 309, Kiev *Phone: +380 44 232 11 22*

- *Ivankiv Town Hall*
  Address: 47 I.Proskury str., Ivankov *Phone: +380 4591 5 18 76*

- *Ivankiv District Administration*
  Address: 47 I.Proskury str., Ivankov *Phone: +380 4591 5 14 44*

Comments can also be made at public consultation meeting, which will be held as follows:

- *June – July 2013*

The date, time and location of public meeting will be announced at least three weeks before the event, and advertised in local mass media. For further information on this project, or to provide comments on the project or the environmental and social documentation, please contact:

Name	**Contact information**
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2 Description of the Proposed Development

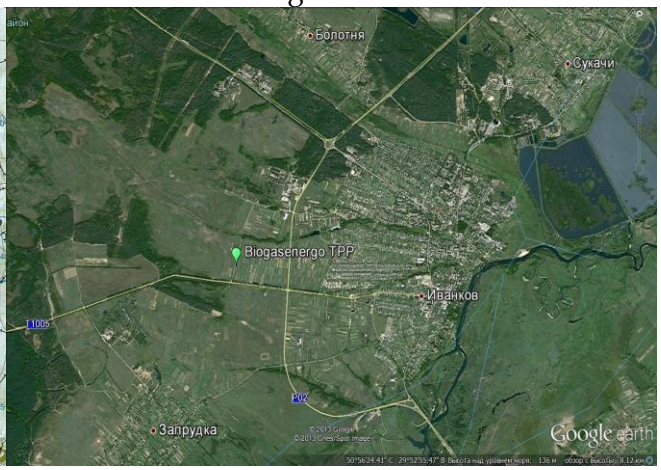
The project developer Biogasenergo Limited Liability Company was established in 2005 in Boryspil District of Kyiv Oblast. Main business focus of the company currently is the development of renewable energy projects in Ukraine, including the construction of biomass thermal power plant in Ivankiv.

The project is located near Ivankiv Town, about 80km northwest of Kyiv. *Figure 1* below shows the location of the site for the biomass power plant.

Figure 1: Location of the project site

General map view

Close-in sattelite image



The project will construct a biomass-fired thermal power plant (TPP) with ultimate total installed capacity of 18 MWe, which will burn wood chips to produce and sell electricity under the "green tariff" regime. It will be implemented in two stages: the first stage is the construction and commissioning of 6 MWe TPP, and the second stage is the expansion of already operating plant by another 12 MWe to 18 MWe in total.

Total feedstock requirements of the plant are around 213,000 tons per annum, when fully operational. Of this around 66,000 tons per annum are required for stage 1 and around 147,000 tons per annum for stage 2. Biogasenergo has already signed a number of contracts with state forestry enterprises and other suppliers in the region to meet the fuel demand (wood residues). With this feedstock, the biomass plant will generate around 121,000 MWh net electricity (after auxiliary consumption) per annum when fully operational. The electricity generated will be fed into the grid at the Zaprudka substation, which is only around one km from the location of the plant. The existing site access road will be upgraded by the developer to allow for greater traffic load necessary to service the project.

The two boilers of the plant will be feeding a common steam range. It will be possible to increase steam production in order to supply heat for the heating of greenhouses which are planned adjacent to the power plant at a later stage.

The biomass power plant will be operated on a landplot of approximately 7.4 hectares, which is owned by Biogasenergo.

By generating the energy obtained from burning the renewable biomass, the project will have significant environmental benefits over other types of energy generation, such as those utilising fossil fuels (natural gas, coal) or nuclear. It will also create new jobs during construction and operation, as well as improve security of energy supply in the area.

3 Environmental, Health, Safety and Social Review

3.1 Project studies and documents

Several documents collectively make up the environmental and social documentation for the project. In addition to this Non-Technical Summary, the other materials include the following documents.

Local Environmental Impact Assessment (OVNS)

To meet the Ukrainian national regulatory requirements, an Environmental Impact Assessment (EIA/OVNS) of the overall project (for the total 18MW output) has been prepared out by a licensed contractor. A separate OVNS for water abstraction boreholes planned by the project has also been completed and approved.

Radiological assessment

Due to high sensitivity of the radiological issues in the project area, which is close to Chernobyl exclusion zone, and in the country in general, the developer voluntarily decided to submit the project design documents to the State Commission for Nuclear Regulation for radiological expertise. The Commission provided comments on the radiological monitoring of feedstock supplies, handling and disposal of ash, and some other aspects of the project, which were subsequently addressed in the updated project design and radiological monitoring arrangements.

Environmental and Social Action Plan (ESAP)

As part of the environmental and social due diligence evaluation, a wide review was conducted of corporate environmental, health, safety and social management arrangements. From the overall review, an Environmental and Social Action Plan (ESAP) has been developed, which identifies mitigation measures to minimise, reduce, eliminate or control potential adverse impacts of the project on the environment and the people. Key mitigation measures proposed in the ESAP are summarised in *Table 1* at the end of this document.

Stakeholder Engagement Plan (SEP)

The Stakeholder Engagement Plant (SEP) has been developed to describe how Biogasenergo will communicate with people and institutions who may be affected by, or interested in the project, at various stages of project preparation and implementation. Biogasenergo will assign a social liaison officer, who will be responsible for keeping open dialogue with stakeholder groups and local public. At any time before and during construction and operation, any stakeholder will be able to raise concerns, provide comments and feedback about the project. All such comments and grievances from people will be accepted, processed and answered by Biogasenergo in a timely manner.

3.2 Sensitive locations

The project is situated in an area of low environmental sensitivity. There are no protected areas in the vicinity of the project site. The nearest residential property is located at approximately 700m from the site, which is well outside of the reglatory-required 300m sanitary-protection zone.

3.3 Project impacts and their mitigation

An evaluation of potential environmental and social impacts determined that, in addition to its benefits, the project could have negative impacts on the environment and people, if not managed carefully. Therefore, Biogasenergo will implement certain actions (called "mitigation measures") to prevent, reduce, or mitigate negative impacts of this project. A summary of key impacts and mitigation measures that have been identified, is provided in *Table 1* below.

Table 1 Overview of Key Potential Project Impacts and Their Mitigation

No	Issue	Potential impact	Mitigation measures
1	Landtake and general construction impacts	Landuse change of at the project site (7.4ha). Impacts during construction of the plant and associated 1km transmission line, such as land excavation, dust generation, noise, air emissions from the vehicles involved, increased road traffic, etc.	- Prepare and implement construction management plan to reduce and mitigate general construction impacts, including noise, air emissions, waste generation and disposal, increased road traffic; - Continuously monitor impacts to comply with appropriate national environmental standards and EBRD requirements.
2	Feedstock origin and condition	Impacts on high conservation value forests and protected areas as potential sources of feedstock. Potential radiological contamination of feedstock sourced from areas contaminated by Chernobyl fallout.	- Develop and implement a sustainable wood procurement policy, stating that the Company will only purchase the 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; - Develop and implement a comprehensive dedicated system for monitoring and prevention of potential radiological contamination of feedstock.
3	Air emission	Air emissions during operation, including emissions from the plant and from vehicles transporting the feedstock.	Emission controls during operation of the 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 and fabric filter; - Compliance with other national standards on air emissions, such as 500 mg/m^3 for Nitrogen Oxide (NO_x) and Sulphur Dioxide (SO_2) if applicable; - Regular Emissions Monitoring equipment; - Controls on dust and methane generated from storage and processing of biomass; - Compliance of vehicle emissions; - Establishement and observance of regulatory-required 300m sanitary protection zone around the plant.
4	Soild waste, including	Generation of solid waste.	- Prepare and implement waste management plans to address

	ash	Generation of ash, which may have high radioactivity levels and may need to be treated as radioactive waste.	generation, storage and disposal of solid waste; - Comply with national requirements on waste; - Use only appropriately licensed contractors for waste disposal; - Develop and implement special procedures dedicated to ash handling and disposal, including compliance with requirements on radioactive waste if applicable; - Carry out radiological monitoring of ash generated.
5	Water and wastewater	Water abstraction and wastewater generation.	- Ensure appropriate containment and disposal of wastewater, including treatment of sanitary water, reuse of process cooling water, and treatment of contaminated storm water; - Take measures to prevent run-off of potentially polluting materials to the soil and groundwater, including keeping hard-standing areas and road surfaces clean from mud and oil build up, and storing hazardous and potentially polluting materials in bunded, secure, areas away from watercourse and pathways to watercourses (e.g. drains, ditches).
6	Traffic and noise	Increased traffic and noise from vehicles transporting feedstock to the biomass plant, and its byproducts.	Develop and implement a traffic management plan to mitigate an increased local road traffic due to transportation of feedstock, including: - Careful consideration and consultation should be given to the agreement of delivery routes to the site area to avoid close proximity to residences, hospitals and schools; - Design routes so as to avoid conflict with other road users; - 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 possible; - Establish and enforce strict delivery times; - Establish and enforce speed limits on- and off-site.