Rokytne project non-technical summary

1 Introduction

This document provides a non-technical overview of *LLC Rokytne Sugar Mill* project to construct biogas power plant in Rokytne 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:

- LLC Rokytne Sugar Mill company offices

Address: Enthusiastov str. 6, Rokitne, 09603, Kiev region, Ukraine. Phone: +38 (044) 482-00-80

- Rokytne Town Hall

Address: Pershotravneva str.2, Rokitne, 09603, Kiev region, Ukraine. Phone: +380 (04562) 5-12-50

- Rokytne District Administration

Address: Lenina str.2, Rokitne, 09603, Kiev region, Ukraine.
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For further information on this project, or to provide comments on the project or the environmental and social documentation, please contact:

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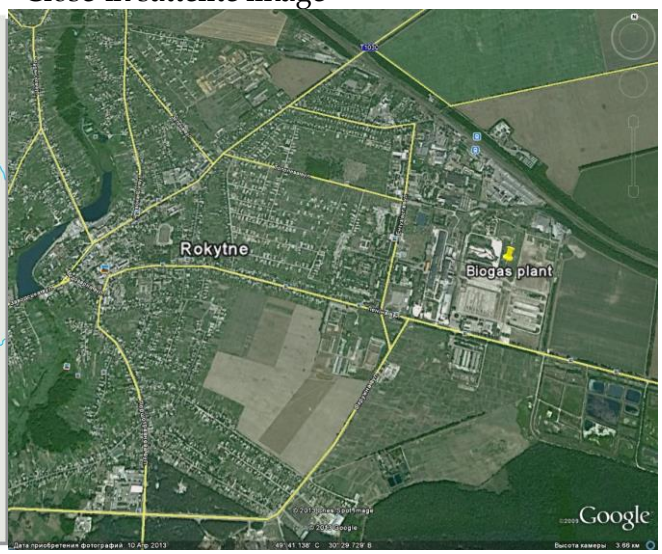
2 Description of the Proposed Development

LLC Rokytne Sugar Mill was established in 2013 in Rokytne Town of Kyiv Oblast for project development and implementation. The main business activity of the company will be producing electricity using biogas. Now the company is developing the project to construct a biogas thermal power plant. *Figure 1* below shows the location of the site for the biogas plant.

Figure 1: Location of the project site

General map view

Close-in sattelite image



The project will construct a biogas-fired thermal power plant with an installed capacity of 2.25 MW, as the first stage of a large biogas plant park with some 20 MW installed capacity in its future final stage. The plant will be located at the territory of Rokytne Sugar Mill, which exists from 1972 and located at the eastern side of Rokytne Town.

With an input of around 106,700 tonnes of feedstock per year, the biogas plant will produce about 9.3 million m^3 of biogas per annum. The two cogeneration units will generate around 16,900 MWh gross electricity per annum from this biogas quantity for feed-in to the power grid system. The electricity will be sold to the grid at the applicable feed-in tariff under the "Green Tariff Law".

The biogas plant will use mainly pressed sugar beet pulp from the sugar mill of the developer and a neighboring sugar plant. In addition, cow manure and chicken dung will be used. The feedstock thus comprises the following components: (i) pressed sugar beet pulp 57,600 tonnes/year; (ii) cattle manure 35,040 tonnes/year; (iii) chicken dung 14,053 tonnes/year.

The plant will produce about 2.25 MWe gross of electricity and about 2.22 MWth gross of heat. Part of the heat will be used internally for heating the fermentation reactor. As a byproduct, the biogas plant will also generate solid and liquid digestate, which will be used as organic fertilizers.

The site for the biogas project takes up a brownfield land plot of 16.5 hectares, including 10ha for the biogas plant and 6.5ha for the two existing sugar pulp storage pits, which are used by the sugar mill. The remaining area is mostly vacant. The land is leased by the developer on permanent basis.

By generating the energy obtained from the renewable biomass, the project will have significant environmental benefits over other types of energy generation, such as those utilising fossil fuels 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 biogas plant has been carried out in 2013 by appropriately licensed project design contractor, Zorg Biogas AG. This OVNS report has been submitted for state ecological review (expertise), which was completed in January 2014.

Environmental and Social Action Plan (ESAP)

As part of the environmental and social due diligence evaluation, a review of environmental, health, safety and social management issues was conducted. 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 *Rokytne Sugar Mill LLC* will communicate with people and institutions who may be affected by, or interested in the project, at various stages of project preparation and implementation. The developer 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 the developer in a timely manner.

3.2 Sensitive locations

The project is situated in an area of low environmental sensitivity. There are no environmentally protected areas and no sites of cultural, historic or archeological significance in the nearest vicinity of the project. The nearest water body is River Ros, located at 5 km from the project site.

The nearest residential properties, Rokytne Town, are located at approximately 800 m from the project site.

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 potential negative impacts on the environment and people, if not managed carefully. Therefore, the project developer 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	General construction impacts	Impacts during construction of the plant, 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	Air emission	Air emissions during operation, including emissions from the plant and from vehicles transporting the feedstock. The emissions include mostly carbon dioxide, which is not regulated, and minor volumes of other ingredients (such as carbon monoxide, nitrogen dioxide, and sulphur dioxide).	Although the emission of carbon dioxide (CO_2) is one of key causes of climate change, the same amount of CO_2 has already been captured by the plants the biomass of which is used as feedstock for the biogas plant. In addition, the climatic impacts of CO_2 are 21 times weaker than those of methane (CH_4) released directly from manure. Implement mitigation measures and best management practices to prevent / reduce / control air pollution from operational biogas generation process. Emissions controls should ensure compliance with Ukraine standards, including consideration of: - Gas cleaning (to remove contaminants in source gas); - Monitoring and control of emissions of nitrogen oxides, sulfur oxides, volatile organic compounds, carbon monoxide , carbon dioxide and particulate matter; - Emergency flaring of methane; - Controls on odour emissions.
3	Solid waste	Solid waste generation, storage and disposal	- Develop and implement comprehensive waste management plan for the project to address generation, storage and disposal of solid waste; - 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); - Management of feedstock if treated as waste, such as sugarbeet pulp; - 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, including use of solid digestate as agricultural fertilizer if appropriate.
4	Wastewater	Wastewater and other potentially polluting materials generation and disposal	- Ensure appropriate containment and disposal of wastewater, including reuse and safe disposal of excess liquid digestate, treatment and disposal of sanitary wastewater and 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).
5	Traffic and noise	Increased traffic and noise during construction and operation from vehicles transporting materials and 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 construction materials and 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.