

## 1. PREFACE

The general conclusions briefly describe the project, its advantages, and the possible negative consequences of its potential impact on the environment and social infrastructure that are described in the Plan of Environmental and Social Measures (PESM), and that were also presented during the public hearings.

In 2011, a search was conducted for the most suitable site for constructing a biogas installation. The result of this search is a site located in close proximity to the Hlobyne Sugar Mill in the City of Hlobyne, Poltava Oblast.

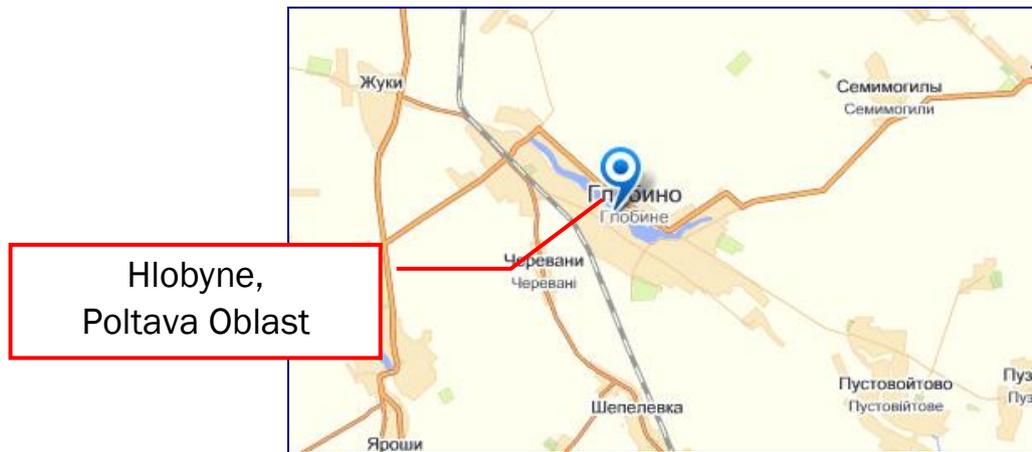


Fig. 1. Location of the enterprise

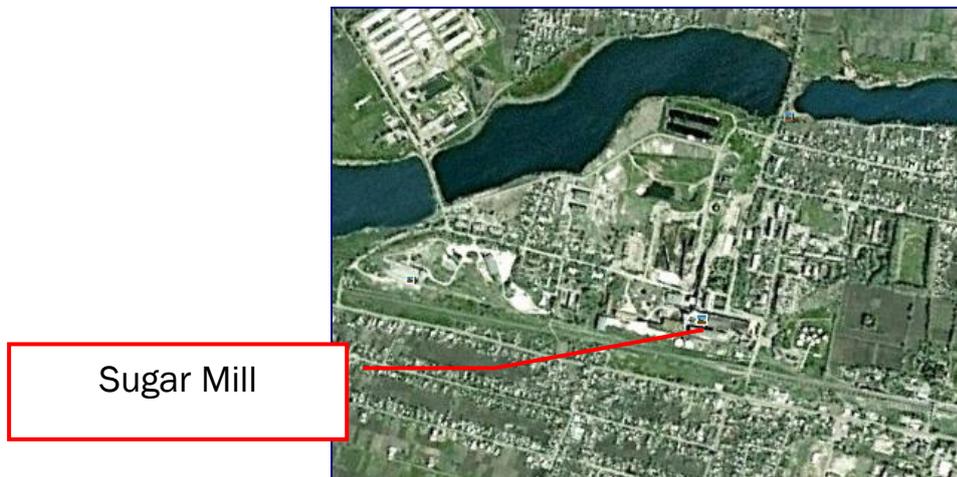
Astarta-Kyiv LLC applied to the European Bank for Reconstruction and Development (EBRD), asking it for a loan to finance the project. The biogas installation construction project costs a total of USD 12 million.

This project is put into Category B in accordance with the EBRD Environmental and Social Policy.

According to this policy, the submitted project falls into the category of projects “...when the potential adverse environmental and/or social impacts that it may give rise to are typically site-specific, and/or readily identified and addressed through mitigation measures. These impacts could be from past, current or future activities.....”

(Environmental and Social Policy, European Bank for Reconstruction and Development, May 2008, Clause 21)

## 2. DESCRIPTION OF THE SITE SELECTED FOR THE BIOGAS INSTALLATION



The project site is located in close proximity to the Hlobyne Sugar Mill in the City of Hlobyne, Poltava Oblast, central Ukraine. Residential buildings are more than 300 meters away from the site, which is in line with the requirements of the State Urban Planning and Development Sanitary Rules.

At the moment, the project site is the private property of Astarta-Kyiv LLC. The site occupies a total of 4,670 sq m.

The terrain is mostly level.

There is a lake called Sukhyi Podil at a distance of 400 meters from the mill.

The study of the maps available in the public domain has shown that there are no conservation areas, national parks, or any other properties protected by the community in immediate proximity to the site.

No other sites or areas that could be of interest for this project have been identified during the consultations.

### 3. DESCRIPTION OF THE BIOGAS INSTALLATION

In this project, the Hlobyne Sugar Mill will use a biogas installation to process sugar production wastes – bagasse.



The capacity of the biogas facility is 1,200 tonnes of processed bagasse and 150,000 cu m of produced biogas a day. The biogas consists of 53 percent methane, 46 percent CO<sub>2</sub> and 1 percent other gases (O<sub>2</sub>, N<sub>2</sub>).

The biogas facility is equipped with an automatic bagasse loading system.

Leaving the fermentation reactor, the sufficiently fermented substrate goes to separators to be divided into liquid and solid parts that are used as replacements for mineral fertilizers. The produced biogas is pumped through the pipe to the mill's boiler house where it is burned to

produce electricity and technological steam. Consumed biogas allows the enterprise to cut its natural gas consumption by 46 percent.

The biogas facility has an automatic control system that decreases the human factor effect.

#### **4. ENVIRONMENTAL IMPACT ASSESSMENT (EIA)**

The EIA for this project will be carried out in accordance with the applicable Ukrainian legislation, EU directives, and EBRD recommendations to study the potential negative impact of the biogas installation on the environment and compare the results with the project data.

If necessary, additional monitoring will be carried out to work out measures to prevent the negative environmental impact of the installation.

#### **5. PRELIMINARY STUDY**

Currently, Astarta-Kyiv has a corporate integrated system of environmental management implemented in accordance with ISO 14001 and the requirements of the Performance Standards of the International Finance Corporation (IFC), which is also being implemented at the Hlobyne Sugar Mill in 2012.

The corporate standards of the Corporate Integrated System of Management (CISM) of the Environment, Labor Protection, and Industrial Safety describe policies and procedures for social and environmental protection, healthcare and safety, as well as steps to be taken by the staff in emergency situations.

Based on the study of the presented data and the subsequent consultations with stakeholders, a conclusion has been drawn that the implementation of the biogas installation construction project will not require any relocation of agricultural fields, business objects, and people.

A study of the corporate administrative measures taken to assess the impact on the environment, human health, safety, and social infrastructure will be carried out within the implementation framework of the Environmental and Social Comprehensive Plan of Action (ESCPA).

#### **6. ENVIRONMENTAL IMPACT OF THE PROJECT**

In general, the project is expected to have a positive socio-economic effect due to a promised decrease in natural gas consumption and an implemented closed production cycle, which will substantially mitigate the negative environmental impact.

The biogas installation is to be erected in close proximity to the place of storage of sugar production wastes (bagasse), which is located on the territory of the Hlobyne Sugar Mill at a sufficient distance from housing locations, with every safety requirement to be observed to meet any emergency.

The biogas installation is protected by the earthen wall with the height of about 4 meters. Around the installation will be installed a few points of fire-extinguishing system, secured by an automatic control system of the biogas installation.

## 7. PLAN OF ENVIRONMENTAL AND SOCIAL MEASURES

To determine specific environmental and social measures to be taken to minimize the negative impact of the construction of the biogas installation, a Plan of Environmental and Social Measures (PESM) is to be developed.

The key measures to be taken in connection with the construction of the biogas installation are as follows:

- obtaining the permits, licenses, and approvals required for the implementation of the project;
- developing a detailed wastes management plan;
- assessing all the involved health and safety risks for all types of work to be performed by the staff and implementing a health and safety plan of action that will cover the control measures and required work instructions;
- developing a labor and social policy;
- working out and implementing a plan of interaction with stakeholders (PIS), including a complaint mechanism; and
- developing and implementing a biogas installation decommissioning strategy that includes a plan of action to minimize the negative impact when decommissioning the equipment.

## 8. PLAN OF INTERACTION WITH STAKEHOLDERS

The Plan of Interaction with Stakeholders (PIS) has been developed to identify key stakeholders to be able to timely update them on potential threats posed by the project. The Plan also presents an official complaint filing and review mechanism for the stakeholders to file their complaints or pose questions, present proposals, and give comments. The PCS is to be revised and updated on a regular basis. If any measures are changed or new measures introduced with regard to the interaction with stakeholders, the PIS will be immediately revised. In addition, the PIS will be periodically reviewed during the implementation of the project and updated as necessary.

The PIS includes:

- consultations with the public and the information disclosure requirements;
- identification of the key and other stakeholders;
- review of the preliminary steps to be taken to establish the interaction with stakeholders;
- a program of interaction with stakeholders, including interaction methods and resources; and
- a complaint filing and review mechanism.

A stakeholder may be a private individual or entity that may be directly or indirectly affected by the project in a positive or negative manner, as well as any third party that wants to express its views on any issues related to the project.

The definition to be used to identify key stakeholders is as follows:

“Any concerned party that makes a significant impact on or is subjected to a significant impact by the project, whose interests, and the potential effects on whom, should be taken into account to ensure the successful completion of the project works.”

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