



## NON-TECHNICAL SUMMARY

Ukrgrafit, Ukraine

August 2013

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# 1. The Project

## Introduction

This document is a NTS of the project for the modernisation and reconstruction of the graphitisation workshop, which provides a summary of the project description, the benefits of the project and the mitigation of potential environmental and social impacts which have informed the development of an ESAP which will be implemented by Public JSC 'Ukrainsky Grafit' or 'Ukrgrafit'. It also provides details of public consultation activities that will be conducted by the company.

Contact details at Ukrgrafit for this project are:

Name of the person and title	Contact Information
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## Ukrgrafit Operations

Ukrgrafit is a leading manufacturer of carbon and graphite electrodes and other related products which are used in many different types of furnaces. They are also used in other applications across the metallurgical, machine building, chemical industries and many other sectors. Ukrgrafit is the only Ukrainian manufacturer of graphite electrodes and is also a worldwide exporter.

The plant has been operational since 1933 when it was built in the Soviet Union era, as part of an aluminium plant, which in turn was part of the Zaporozhye Industrial Complex. It became an independent industrial unit at the beginning of the 1940s. Apart from a period during the war when the plant was dismantled and evacuated, the facility has continued production and undertaken several upgrades and modernisation programmes throughout its history including the introducing new technologies, equipment and manufacturing lines. In 1994, the company was transformed into Joint-Stock Company "Ukrainsky Grafit".

The "project" is the reconstruction and modernisation of the graphitisation workshop. The graphitisation workshop was originally built in 1952. The graphitisation process currently uses 21 Acheson technology furnaces and there is a phased programme planned to replace these existing furnaces with 24 new Castner technology furnaces. This technology enables electrodes to be placed longitudinally, aligned in columns with end-to-end contact. The space around the columns in the furnace troughs are filled with coke fines (insulating packing material) by means of a crane and the furnace hood is positioned to extract air emissions with a new bag filter installed to control dust emissions prior to emissions being released to atmosphere. The columns act as a DC resistor, when baked electrode bodies are heated to a temperature of between 2800°C to 3000°C. After heating for a predetermined period, the electrodes are cooled down naturally. The electrodes are then unloaded by a crane. A new pneumatic removal system will be used to remove the insulating packing material from the furnace trough and ensure it is cleaned for the next batch. Within the graphitisation workshop, there will be different storage areas that will be constructed for the loaded and unloaded electrodes. In addition, as part of the project, there will be a new control room built. Power will be supplied by reconstructing an existing overhead cable routing line from the graphite substation to the graphitisation workshop.

The project will take place over a period of 3 years and is expected to be completed in 2016. The design department of Ukrgrafit are designing and overseeing the contractors that will be to reconstruct the graphitisation workshop. A number of contractors will be used for various construction activities including

utilities, lengthwise graphitisation, power supply including cable routing infrastructure and equipment. Engineers from Ukrgrafit will perform the construction works for the arrangement of the furnaces.

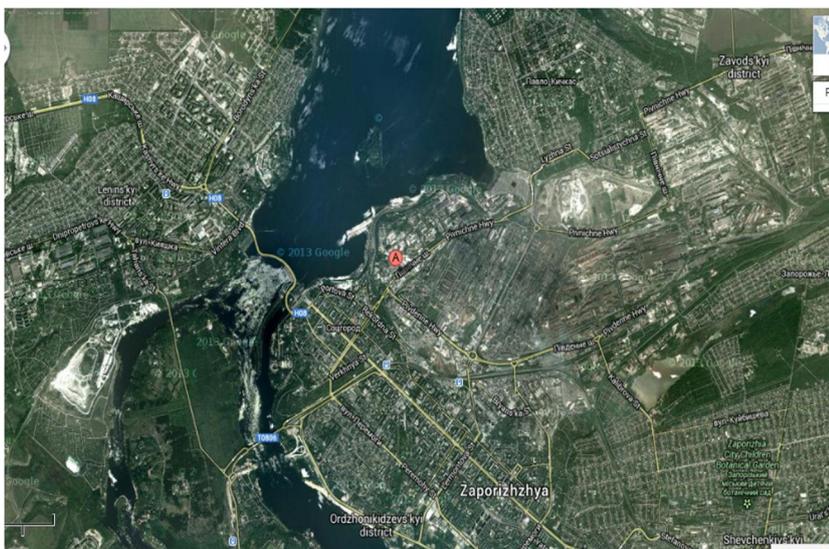
The EBRD is considering providing a senior corporate loan to be used for a CAPEX reconstruction and modernisation programme for the graphitisation workshop. In advance of this potential loan to finance CAPEX, a high level ESDD was undertaken to assess EHSS management of the production facilities at the plant in Zaporozhye has been undertaken.

## 2 Site Setting and Surrounding Land

### Location of Facilities

The company is located within an industrial area, known as Dneprovsky industrial complex in Zaporozhye, south-eastern Ukraine. The site is located near to the Dnieper River and covers an approximate area of 46ha within the industrial area. The site is adjacent to the DneproGES hydro power station, built in the period of 1927-1939 which was the first hydroelectric plant in the Soviet Union and the largest in Europe at that time. During the construction of the dam, Dnieper rapids were flooded which provided the shipping along the Dnieper River. Rapid economic development of Zaporozhye city began soon after due to the construction of the dam. The industrial area where Ukrgrafit is located consists of ferroalloy, aluminium and concrete plants and other industrial plants surrounding the site with limited residential areas.

#### Site Location and Surrounding Areas



The company lease the land where the site is located on a lease term of 50 years. The site facilities are located over two areas with a road running between which is government owned, although Ukrgrafit has obligations with the authorities to clean the municipal road and upkeep the green spaces in the areas of the enterprise.

There are no plans to acquire land or any requirements for resettlement for this project. The reconstruction and modernisation of the graphitisation workshop is to be carried out within the territory of the existing site and specifically in the graphitisation workshop. It is planned that the power supply for the graphitisation workshop and new furnaces will run from the

substation using the existing cableway that will be reconstructed. This runs from the site over the green space and a road.

The site has a SPZ in accordance with statutory requirements for this type of industrial activity. Based on Ukrainian regulations, a SPZ of 1 km as a minimum from the geometrical centre of the plant is required, and the boundary and specific location of the zone is determined by an external company that undertakes the assessment. In some places, taking into account the activities and performance of the enterprise of its obligations to the authorities and local community, the size of the SPZ has been reduced to 930-950 metres, which excludes two residential buildings from the SPZ which were previously located just within the 1 km boundary.

## Investment

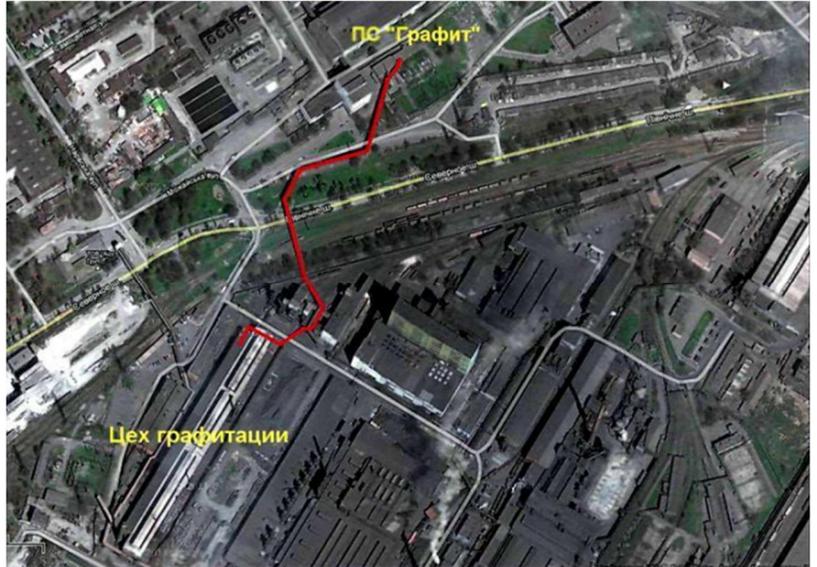
The plant located in Zaporozhye has two main areas of production activities which are coal products and graphitised products with several workshops each. Each of the process stages for coal products and graphitised products are similar.

Final products are stored in warehouses packaged ready for transportation to the customers. The ancillary operations at the site include a compressed air station, a boiler house, waste water treatment facilities, mechanical repair workshop, laboratories etc.

The reconstruction and modernisation of the graphitisation process, is confined mainly to the graphitisation shop and impacts should be readily identified and assessed and will be addressed through appropriate mitigation measures.

The production capacity of the existing graphitisation plant is approximately 32,200T of semi-finished graphitised products. After modernisation and reconstruction, the graphitisation shop will have a capacity of approximately 42,695T of semi-finished graphitised products.

**Cable Routing Line**



## 3 Environmental, Health, Safety and Social Review

### Overview of EHSS Review

An ESDD audit was carried out during June to August 2013 to conduct a high level EHSS corporate audit of Ukrgrafit operations and of the company's plans for the reconstruction and modernisation programme of the graphitisation workshop. An evaluation of both the impacts and benefits of the project have been undertaken and where the results of the audit have identified mitigation measures to address impacts or improvements in corporate EHSS performance, a number of actions have been proposed and incorporated into an ESAP to ensure full compliance with relevant corporate, National, EU standards and EBRD Performance Requirements.

As part of the audit, a review was also undertaken of the status of the planning with regard to the procedure for developing an EIA (OVNS in Ukraine), public consultation and obtaining the necessary permits to construct and operate the new graphitisation plant.

In addition, as part of audit, a SEP has been developed, further details of which are provided in this document.

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## Benefits of the Project

The reported benefits from the modernisation of the graphitisation plant are:

- New up-to-date furnace technology with enhanced reputation, competitiveness and increased export potential for Ukrgrafit
- Higher production performance (by reducing graphitisation production time)
- Reduction in electricity consumption from reduced heating up of thermal insulating packing material and the implementation of an Energy Efficiency Management System
- Higher environmental standards (lower dust and gaseous emissions)
- Reduction of auxiliary raw materials consumption used for the graphitisation process
- Improvement in the quality of graphite blanks by reducing the degree of anisotropy (improvement of conductivity)
- Introduction of a new advanced products (graphitised cathode blocks for the aluminium industry) with export potential to the CIS market
- Increased labour productivity and therefore cost efficiency savings
- Increased equipment durability

The reconstruction and modernisation programme of the graphitisation workshop replacing the existing Acheson furnaces with new Castner furnaces will result in greenhouse gas savings estimated to be of the order of 31,818 t CO<sub>2</sub>-e/yr. This is based on an electricity savings of some 34,774 MWh/yr. The electricity consumption for the whole facility in 2012 was 241,615 MWh/yr.

## Environmental and Social Action Plan

A summary of the key themes that are incorporated into the ESAP from the findings of the audit are summarised below.

Review Areas	Actions Areas
<b>Corporate EHS Management</b>	<ul style="list-style-type: none"> <li>■ Develop and implement a SEP that includes a grievance mechanism</li> <li>■ Report on company EHS performance and resolution of grievances</li> </ul>
<b>Environmental Performance</b>	<ul style="list-style-type: none"> <li>■ Undertake a groundwater review and investigation study. Continue the testing of diesel underground tanks and fuel accounting to monitor usage and potential losses and develop a plan for the long term replacement</li> <li>■ Undertake hazardous materials studies with plans for removal of asbestos and PCBs</li> <li>■ Develop a waste management plan with collection and separation of wastes in designated storage areas which are clearly marked.</li> <li>■ Develop a decommission plan for old equipment to be dismantled and removed safely to protect workers and the environment</li> </ul>
<b>Health and Safety</b>	<ul style="list-style-type: none"> <li>■ Implement health and safety risk assessment for all jobs on site and new jobs (contractors and operators) within the new graphitisation shop</li> <li>■ Establish a Construction Management Plan for oversee contractor / workforce EHSS performance during the project construction</li> <li>■ Improve worker protection with the enforcement of the use of PPE with signage and training; employment of more extractor hoods and LEV systems; strategically locating first aid kits across the site following a review of current locations; and review of guarding, emergency and automated shut down systems</li> <li>■ Develop a procedure for manual handling</li> <li>■ Develop a site wide emergency evacuation plan with locations of muster points</li> </ul>
<b>Planning and Permits</b>	<ul style="list-style-type: none"> <li>■ Develop an EIA project with mitigation measures integrated into the project design</li> <li>■ Engage in public consultation in accordance with national regulatory requirements</li> </ul>
<b>BAT Assessment</b>	<ul style="list-style-type: none"> <li>■ Review of the storage, handling and abatement systems of all solid materials used on site to assess the adequacy of minimising emissions and implement an improvement plan</li> <li>■ Improve storage and containment measures of bulk storage pitch tanks</li> <li>■ Review emission levels against BAT benchmarks with an assessment of abatement options to meet the benchmarks for all emission points to air and implement an improvement plan. For the new graphitisation process, incorporate into design, adequate abatement systems to achieve these benchmarks</li> <li>■ Evaluate feasible options for the alternative use of waste coal dust and chips including the current option of combusting in the waste heat boiler to identify the best option and implement an improvement plan</li> </ul>
<b>Social and Employment</b>	<ul style="list-style-type: none"> <li>■ Formalise the current grievance and complaints mechanisms used for employees and external stakeholders with formal written policies and procedures</li> <li>■ Review and update or develop written employment / social policies for the company</li> </ul>

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## 4 Stakeholder Engagement Plan

### Overview of the SEP

A Stakeholder Engagement Plan has been developed for Ukrgrafit with the express objective of identifying key stakeholders and ensuring that, where relevant, they are informed in a timely manner of the potential impacts of projects. The plan will also identify a formal grievance mechanism to be used by stakeholders for dealing with complaints, concerns queries etc. It will be reviewed and updated on a regular basis. If activities change or new activities relating to stakeholder engagement commence, the SEP will be brought up to date. The SEP will also be reviewed periodically during project implementation and updated as necessary.

The SEP includes the following:

- Project description, location of the site and key environmental and social issues;
- Public consultations and information disclosure requirements;
- Identification of stakeholders and other affected parties;
- Overview of previous Ukrgrafit stakeholder engagement activities;
- Stakeholder engagement programme and methods of engagement and resources; and a
- Grievance mechanism.

Stakeholders could be individuals and organisations that may be directly or indirectly affected by the project either in a positive or negative way, who wish to express their views. The definition applied to identify key stakeholders is:

***'any stakeholders with significant influence on or significantly impacted by, the work and where these interests and influence must be recognised if the work is to be successful'.***

Key stakeholders have been identified from the following categories: international; governmental (Ukrainian state / regional and local); advisory non-government; services / suppliers; clients; institutions (universities, think tanks, etc.); the industrial sector (trade bodies, iron manufacturers, steelmakers), internal stakeholders (employees); general communities (locally affected people); public groups (nearby hospital, local schools); and the media.

The SEP outlines the methods that Ukrgrafit will adopt to ensure effective stakeholder engagement is undertaken, providing details of the programme of future public consultation and information disclosure that will be recorded for major projects. Ukrgrafit will record the following information on an ongoing basis:

- Type of information disclosed, in what forms (e.g. oral, brochure, reports, posters, radio, etc.), and how it was released or distributed.
- The locations and dates of any meetings undertaken to date.
- Individuals, groups, and / or organisations that have been consulted.
- Key issues discussed and key concerns raised.
- Company response to issues raised, including any commitments or follow-up actions.
- Process undertaken for documenting these activities and reporting back to stakeholders.

If there are questions, queries, complaints or grievances regarding future projects, a grievance mechanism has been developed to address these issues and a grievance form will be used to record this information. The grievance form and the outline on how to use the grievance form is provide below.

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## Grievances and Form

A grievance mechanism will be adopted in which the grievance form presented below will be used as required to handle grievances from non-employees. The assessment of grievances will be carried out in accordance with Ukrainian Law and responses will be provided within one month on a grievance being lodged. The mechanism will be as follows:

- Grievance received
- Grievance recorded in a register
- For an immediate action to satisfy the complaint, the complainant will be informed of corrective action
- Implement corrective action, record the date and close case
- For a long corrective action, the complainant will be informed of proposed action
- Implement corrective action, record the date and close case

A grievance should be recorded by the complainant using the grievance form below, ensuring that contact details are provided with the preferred method and language of communication. A clear description should be provided of the incident or grievance. Ukrgrafit will respond to grievances within one month of receiving the form.

## Public Grievance Form

<b>Reference No:</b>	
<b>Full Name</b>	
<b>Contact Information</b>  Please mark how you wish to be contacted (mail, telephone, e-mail).	<input type="checkbox"/> <b>By Post:</b> Please provide mailing address: _____ _____ _____  <input type="checkbox"/> <b>By Telephone:</b> _____  <input type="checkbox"/> <b>By E-mail</b> _____
<b>Preferred Language for communication</b>	<input type="checkbox"/> <b>[English]</b> <input type="checkbox"/> <b>[Other - specify]</b>

<b>Description of Incident or Grievance:</b>	What happened? Where did it happen? Who did it happen to? What is the result of the problem?

<b>Date of Incident/Grievance</b>	
	<input type="checkbox"/> <b>One time incident/grievance (date _____)</b> <input type="checkbox"/> <b>Happened more than once (how many times? _____)</b> <input type="checkbox"/> <b>On-going (currently experiencing problem)</b>

<b>What would you like to see happen to resolve the problem?</b>

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

**Please return this form to:**

Mr. Kirill Yankovsky  
 Head of Marketing Divison  
 PJSC Ukrgrafit  
 Severnoye Shosse 20  
 69600 Zaporozhye  
 Ukraine  
 Email: [yankovsky@ukrgrafit.com.ua](mailto:yankovsky@ukrgrafit.com.ua)

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## Glossary

CAPEX	Capital Expenditure
CIS	Commonwealth of Independent States
DC	Direct Current
ESAP	Environmental and Social Action Plan
EBRD	European Bank for Reconstruction and Development
ESDD	Environmental and Social Due Diligence
EHSS	Environmental, Health and Safety and Social
EU	European Union
EIA	Environmental Impact Assessment
EHS	Environmental Health and Safety
Ha	Hectares
LEV	Local Exhaust Ventilation
MWh/yr	Megawatt hour per year
NTS	Non-Technical Summary
OVNS	Ukrainian Environmental Impact Assessment
Public JSC	Public Joint Stock Company
PPE	Personal Protective Equipment
PCB	Polychlorinated biphenyls
SPZ	Sanitary Protection Zone
T	Tonnes
t CO <sub>2</sub> -e/yr	Tonnes of carbon dioxide equivalent per year
Tpa	Tonnes per annum

