



## **NON-TECHNICAL SUMMARY**

**Management and Reuse of the Ashes/Slag from the Kragujevac DH Plant – Serbia**

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## Abbreviation List

Abbreviation	Full name
CESMP	Construction Environmental Social and Management Plan
DD	Due Diligence
DH	District Heating
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
MoEP	Ministry of Environmental Protection
OHS	Occupational Health and Safety
PIU	Project Implementation Unit
PSC	Procurement Support Consultant
RSA	Road Safety Audit
RS	Republic of Serbia
SEP	Stakeholder Engagement Plan

# 1 Introduction

The Ministry of Environmental Protection (the “MoEP”) is planning the implementation of a district heating project in the City of Kragujevac (the "City"), which will support the replacement of coal boilers in a city centre heating plant (“District Heating (DH) Company Energetika” or “Energetika” or “the Company”), with new natural gas boilers of approximately 110 MW thermal power, and rehabilitation of the on-site ash stockpile site (the “Project”).

The European Bank for Reconstruction and Development (the “EBRD” or the “Bank”) signed a loan agreement with the Government of Serbia for the Project of up to EUR 18 million to the Republic of Serbia is consisting of 2 Parts:

- the "Part 1" (committed) where up to EUR 15 million of loan was used for the replacement of boilers in a city centre heating plant, and
- the "Part 2" (uncommitted) where up to EUR 3 million is to be committed at Bank's sole discretion for management and reuse of the ashes/slag from the Energetika premises following completion of a due diligence process.

Part 1 is under implementation, while the Part 2 is currently at a preliminary design phase and is under-going due diligence by the EBRD.

This document, Non-Technical Summary (NTS) has been developed as a part of the Environmental and Social Due Diligence of the Part 2 of the Project (the “Assignment”) - Management and Reuse of the Ashes/Slag from the Kragujevac DH Plant. It provides general information on:

- Reuse of ash deposited at the Energetika complex as a construction material for reconstruction of two local roads – Besnjaja Road and Stragari – Kutlovo.
- Potential environmental and social (E&S) impacts and mitigation measures to be implemented to address identified environmental, health and safety and social risks,
- Information on how members of the public can contact the Company with any further questions they might have about the Project.

# 2 Project Description

## Project Structure

Project structure is already in place and includes following parties:

Responsible Party	Responsibility
The Ministry of Environmental Protection	Ultimately responsible for implementation of the Project
Project Implementation Unit (PIU)	Already established. Responsible for implementation of the Project. Includes representatives of MoEP, the City and the Energetika. Procurement Support Consultant has been contracted to provide support to PIU through the procurement process.
The City of Kragujevac	Responsible for any expropriation process and any expropriation issues that may arise during Project implementation - The City of Kragujevac Department for Property Affairs, Urban Planning, Construction and Legislation
The District Heating Company Energetika	Responsible for management of the ash deposited within Energetika complex and for coordination with the future Contractor regarding removal and transport of the ash. Energetika has separate departments which are responsible to manage environmental, social and health and safety aspects of Company’s operations: <ul style="list-style-type: none"><li>•Legal, Administration and Human Resources Department</li><li>•Health and Safety Department</li><li>•Quality Assurance and Environmental Protection Department</li></ul>

The Contractor for execution of road reconstruction works is yet to be selected. It is expected that selection process will be completed in 2023 under the rules of the Yellow FIDIC contract.

## Part 2 – Road reconstruction and reuse of ash material

The Project Part 2 is expected to fully reuse ash (product of coal fired boilers) through reconstruction of the selected local roads. This will result in removal of ash from the deposit location within the complex of Energetika (Figure 1), located in the center of the City of Kragujevac. Depending on the weather conditions, deposited ash is contributing to the air pollution, as it spreads when the weather conditions are windy, due to its fine granulation. Implementation of Part 2 should result in removal of this impact and improvement of air quality in the area.

Figure 1 – Energetika complex and location of the ash deposit area



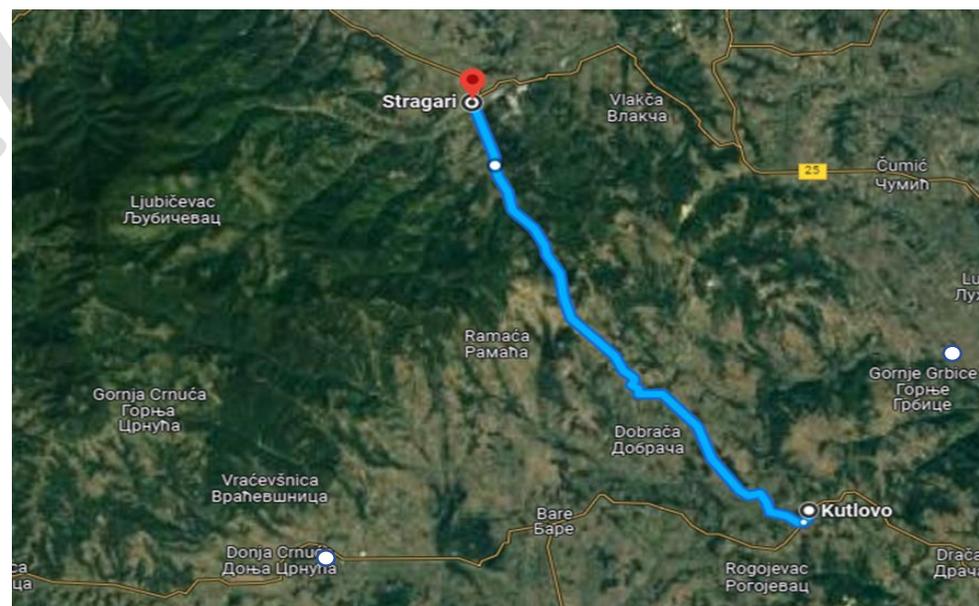
Ash will be used as a construction material and incorporated into the road body, in accordance with the Regulation on Technical and Other Requirements for Ash as a Construction Material Intended for Use in the Construction, Reconstruction, Rehabilitation and Maintenance of Infrastructure Facilities for Public Use (Official Gazette of the RS, No. 56/ 2015).

Besnaja road (Figure 2) and Stragari -Kutlovo road (Figure 3) have been selected for reconstruction. No sensitive recipients have been identified in the immediate vicinity of these roads. However, future Contractor will be responsible to identify any sensitive recipients in the area of reconstructed roads or along the traffic routes to be used for transport of the ash and other construction materials.

Figure 2 – Besnjaja road -



Figure 3 – Stragari – Kutlovo road



### 3 Environmental and Social Impacts

Environmental and Social Assessment process in Serbia is carried out in accordance with Law on Environmental Impact Assessment. List of projects for which development of the Environmental Impact Assessment (EIS) is or may be required is defined in the “Decree Determining a List of Projects for Which an Environmental Impact Assessment shall be Carried Out and a List of Projects for which an Environmental Impact Assessment may be Required” - EIA Decree (Official Gazette of RS no. 84/05 and 114/08).

Road reconstruction projects of this type (municipal local roads, with no increase in number of traffic lanes) are not on the list of the projects for which the development of full EIA is or may be required.

There is a possibility that additional road sections will be selected for reconstruction to ensure full reuse of ash deposited at the Energetika complex. Once identified, additional road sections will have to go through the official EIA process defined under national legislation, however it is not expected that EIA will be required. However, in order to ensure that E&S impacts of any future road reconstruction under this Project are assessed, the Project should ensure that a high-level E&S assessment in line with the EBRD Environmental and Social Policy 2019 requirements is developed to assess impacts and define mitigation measures, especially for any sensitive recipients in the area of the selected road.

#### Ash Material Reuse

As study has been undertaken in 2022 to understand the potential hazardousness of ash material and option analysis for recycling and disposal of fly ash and bottom ash (slag) produced by coal plants and heating boilers in Serbia.

Key conclusions of the Screening Study are the following:

- Ash deposited at the Energetika complex has been categorized as a non-hazardous material suitable for road construction works;
- Option analysis defined road (re)construction as the most preferable reuse option.

### Project benefits

The Project implementation is expected to result in following positive impacts :

Topic	Positive Impact / Benefit
Resource efficiency	Reuse of ash as a product of coal fired boilers used for district heating in the City of Kragujevac, which would otherwise be treated as waste product.
Pollution prevention and control / air emissions / occupational and community health	Removal of ash from the Energetika complex will eliminate the source of additional air pollution in the area (and the City of Kragujevac), which was the result of spreading fine ash particles in the form of dust during unfavourable weather conditions (wind). This will contribute to improvement in the air quality and lower the impact on the occupational and community health.
Pollution prevention and control / waste waters	Deposited material at the Energetika complex is not protected from the weather conditions, leading to a wastewater / leachate being generated during the rain/snow season. By eliminating this source of pollution (ash) the project will have a positive effect on the quality wastewater currently discharged without any treatment into the drainage system, and ultimately into River Lepenica.
Traffic and road safety improvement	Currently these roads are either not paved (Besnjaja road) or in deteriorated condition (Stragari – Kutlovo), posing a risk for traffic, road and community safety in the Project area. Implementation of the Part 2 of the Project will result in better road safety conditions along the reconstructed roads, leading to improved traffic, road and community safety.
Opportunity / Future similar ash reuse projects	Successful implementation of the Part 2 of the Project could provide a good practice example for similar future projects and potential long-term solution for reuse of fly and bottom ash as a product of coal fired boilers, widely used for district heating purposes in Republic of Serbia.

### Potential impacts and mitigation measures

Potential adverse environmental, social and health and safety impacts of the Part 2 of the Project are expected mainly to be site specific during the construction phase, with limited potential impacts also identified for the operation phase.

Pre-Construction and Construction Phase	
Possible Impacts	Proposed Mitigation Measures
<p><b>Ash removal, transport and handling</b> Ash will be used as a construction material. Inadequate removal, transport and handling of ash could lead to increased dust levels during loading, unloading and transport of ash, resulting in impacts on:</p> <ul style="list-style-type: none"> <li>• <b>Occupational and community health</b> – because of inhaling of fine ash particles.</li> <li>• <b>Road and traffic safety</b> – overloading of transport tracks, lack of truck cover during transport leading to increased level of dust, lower visibility, increasing the risk on traffic and road safety as well as community safety.</li> <li>• <b>Soil and water pollution</b> - impact on vegetation, impact on surface waters. Potential impact on vegetation, surface and groundwaters increases in case of material loss during transport, either because of overloading or traffic accident during transport.</li> </ul>	<p>Ash Removal Methodology has been developed and will be included as a requirement for in the contract for execution of construction works.</p> <p>The future contractor will be required to further elaborate and specify in detail control and mitigation measures to prevent identified risks in consultation and coordination with PIU and Energetika.</p> <p>Requirement for preparation of the Construction Environmental and Social Management Plan which will define control and mitigation measures will be included in the in the contract for construction works. It will be implemented by the Contractor.</p>
<p><b>Impacts on environment</b> Temporary generation of waste during construction of works in the Project area. Inadequate waste and wastewater management, including storage, handling, spill protection could lead to soil, surface water and groundwater pollution.</p>	<p>The Contractor will be responsible to implement control and mitigation measures to avoid, prevent and minimise any impacts on environment during the execution of construction works. Requirement for preparation of the Construction Environmental and Social Management Plan to define control and mitigation measures will be included in the in the contract for construction works.</p>
<p><b>Health and Safety</b> - Impact on workers, community and traffic safety, during the transport of material, along the transport routes and in the area of execution of construction works.</p>	<p>The Contractor will be responsible to develop and implement Specific Construction Health and Safety Management Plan to ensure adequate mitigation measures relevant for health and safety of workers, community, traffic management during construction.</p>
<p><b>Stakeholder Engagement</b> - People affected by the Project and other stakeholders may not be adequately informed and consulted about the impacts and risks of the Project.</p>	<p>Stakeholder Engagement Plan will be implemented by all Project parties to manage consultations and communication with the Project affected people and other relevant stakeholders.</p>

<p><b>Labour and Working Conditions</b> Implementation of the Part 2 of the Project will potentially result in hiring of new workforce. There is a potential risk that contractors and suppliers will not fulfil the labour and human resources standards defined by EBRD Performance Requirement 2, in addition to the relevant national legislation requirements.</p>	<p>Labour and human resources management standards defined by EBRD Performance Requirement 2 and relevant national legislation will be defined within the contracts for contractors and suppliers and cascaded down the supply chain by ensuring that the same level of requirements is included in any future subcontract or supply contracts.</p>
<p><b>Land Acquisition</b> The full extent of land to be required for the execution of the reconstruction works on both local roads cannot be determined until the main design confirms the extent of the widening of the selected sections of the roads. There is a possibility that the land acquisition will be required.</p>	<p>Land Acquisition Framework has been prepared to capture all requirements that need to be fulfilled by the Project during any land acquisition process in line with the EBRD standards and national legislation requirements. Once the information about land needed for the execution of works is confirmed, the Project will develop and implement Land Acquisition and Resettlement Plan to ensure land acquisition process is completed in line with relevant standards.</p>
<p><b>Lack of implementation of Project standards</b> Inadequate environmental, social and health and safety expertise within the Project structure may lead to lack of timely identification of Project risks and implementation of defined control and mitigation measures.</p>	<p>Supervising Engineer (if contracted) and Contractor will appoint environmental, social and health and safety specialists in their teams. Regular reporting throughout the Project structure.</p>

Operation phase	
Possible Impacts	Proposed Mitigation Measures
<p><b>Road safety</b> Reconstruction of the local roads is expected to result improvement of road conditions and in general road safety. However, for this to be achieved road design safety standards will need to be implemented in line with the national legislation and good international practice. Possible risks and impacts may arise from implemented design solutions.</p>	<p>Road Safety Audit will be undertaken to confirm implementation of design solutions in line with national and international safety standards.</p>

## 4 Engagement with stakeholders

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The Stakeholder Engagement Plan (SEP) for the Part 1 of the Project was developed in June 2021 and it is available on Energetika's website (<http://www.energetika-kragujevac.com/>).

Separate Stakeholder Engagement Plan has been developed for the Part 2 of Project and it includes a grievance mechanism. It will be disclosed on the Energetika's website - <http://www.energetika-kragujevac.com/>.

### Grievance Mechanism

The main objective of the grievance mechanism is to assist Project Affected Persons in efficient and outcome effective resolution of grievances related to the Project activities. Furthermore, it will act as a mediator in disputes arising from Contractor's activities and acts of other parties involved in implementation of the Project with the aim to minimize residual impacts and avoid, whenever possible, initiation of lengthy and costly judicial processes.

Any person or organisation may send comments, complaints and/or requests for information in person or via post, telephone or email using the grievance form and contact information provided on the Energetika's, the City of Kragujevac Administration and Ministry of Environmental Protection websites, at the local municipality notice board and website (if available) and at any site offices. The reception of grievance should be formally acknowledged through a personal meeting, phone call, email or letter as appropriate within 7 working days from submission. If the grievance is not well understood or if additional information is required, clarification will be sought from the complainant at this time. The person/organization that submitted the grievance should be provided with contact information of the person responsible for its resolution and the estimated time for completion. If any grievance cannot be addressed or if action is not required, a detailed explanation / justification will be provided to the complainant on why the issue was not addressed. The response will also contain an explanation on how the person / organization that raised the complaint can proceed with the grievance in case the outcome is not satisfactory.

All grievances will be responded to within 30 working days from submission. In case of delay, complainants will be notified about the reasons for the delay and the expected timing for when their grievance will be addressed. The proposed resolution should be confirmed with the complainant before implementation to minimise

unnecessary/unwarranted actions. If they agree with the approach required actions are implemented to deal with the issue. Completion of actions is recorded in the Grievance Log Register. The response is signed off by the appropriate manager. This includes either signing off the Grievance Log Register or confirming in official correspondence (which will then be filed with the grievance to indicate agreement and referenced in the register).

Please find a grievance form at the end of this document.

## Contact Information

CONTACT INFO	Energetika d.o.o. Kragujevac	The City of Kragujevac	Ministry of Environmental Protection	Future Contractor
<i>Full Name of the authorized person for handling requests for free access to information of public importance</i>	<b>Jevtic Ivana</b>	<b>Jelena Timotijević</b>	<b>Aleksandra Tosic</b>	<i>Contact details of the contractor(s) will be added once the contractor(s) have been identified</i>
Address	Ulica Prvoslava Rakovica 4a, Kragujevac	Nikole Pašića 6/2	Omladinskih brigada 1	<i>TO BE CONFIRMED</i>
Telephone:	0800 034-033 (free of charge) +381 34 336-238  +381 62 8491256	+381602340356	+381 11 312 00 51	<i>TO BE CONFIRMED</i>
E-mail address:	<a href="mailto:office@energetika-kragujevac.com">office@energetika-kragujevac.com</a>  <a href="mailto:ijevtic@energetika-kragujevac.com">ijevtic@energetika-kragujevac.com</a>	<a href="mailto:jtimotijevic@kg.org.rs">jtimotijevic@kg.org.rs</a>  <a href="mailto:investicije@kg.org.rs">investicije@kg.org.rs</a>  <a href="mailto:kabinet@kg.org.rs">kabinet@kg.org.rs</a>	<a href="mailto:Kragujevac.toplana@eko.gov.rs">Kragujevac.toplana@eko.gov.rs</a>	<i>TO BE CONFIRMED</i>
Web	<a href="http://energetika-kragujevac.com/">http://energetika-kragujevac.com/</a> <a href="http://www.energetika-kragujevac.com/contact.php">http://www.energetika-kragujevac.com/contact.php</a>	<a href="https://www.kragujevac.rs/">https://www.kragujevac.rs/</a>	<a href="https://www.ekologija.gov.rs/">https://www.ekologija.gov.rs/</a>	<i>TO BE CONFIRMED</i>

## Public Grievance Form

<b>Reference No:</b>	
<b>Full Name</b>	
<b>Contact Information</b> (Please note this information is not obligatory. Your grievance will be treated equally, however, no direct response can be provided.) Please mark how you wish to be contacted (mail, telephone, e-mail).	<input type="checkbox"/> <b>By Post: Please provide mailing address:</b> _____ _____ _____ <input type="checkbox"/> <b>By Telephone:</b> _____ <input type="checkbox"/> <b>By E-mail</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: _____	