

# Novi Sad Electric Bus Project, Serbia

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## Non-Technical Summary

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**25 November 2021**

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# 1. Background

## Introduction

The European Bank for Reconstruction and Development (EBRD) is considering a loan to the City of Novi Sad (“the City”) for the proposed purchase of 10 electric buses as part of an ongoing fleet renewal programme (the “Project”). The buses will be operated by the public transport operator Javno Gradsko Saobraćajno Preduzeće Novi Sad (JGSP Novi Sad or the “Company”).

This Non-Technical Summary (NTS) provides a description of that planned bus purchase and describes the potential benefits and impacts of the Project. It also describes how potential impacts generated by the Project and its associated facilities<sup>1</sup> (including a depot site) will be avoided, mitigated and managed through all phases of the development lifecycle while also providing a summary of the future approach to stakeholder engagement.

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## Site Location

The Company's bus depot facility is in the City of Novi Sad, within the western part of the Novo Naselje neighbourhood. As shown in Figure 1, the boundary of the bus depot facility is shown in red. The facility is flanked by busy arterial roads to the east (Bulevar Kneza Milosa) and south sides (Futoški Put) and to the west is undeveloped land. There are residential buildings to the north of the bus depot approximately 35 m from the edge of the bus parking area. However, the Project is predominantly concerned with replacement of the existing 10 diesel buses, with no modifications envisaged to the actual depot. The physical Project footprint is therefore limited.

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<sup>1</sup> As per EBRD (European Bank for Reconstruction and Development) performance standards' definition, Associated facilities or businesses that are (iii) not funded by the EBRD as part of the project and may be separate legal entities yet whose viability and existence depend exclusively on the project and whose goods and services are essential for the successful operation of the project.

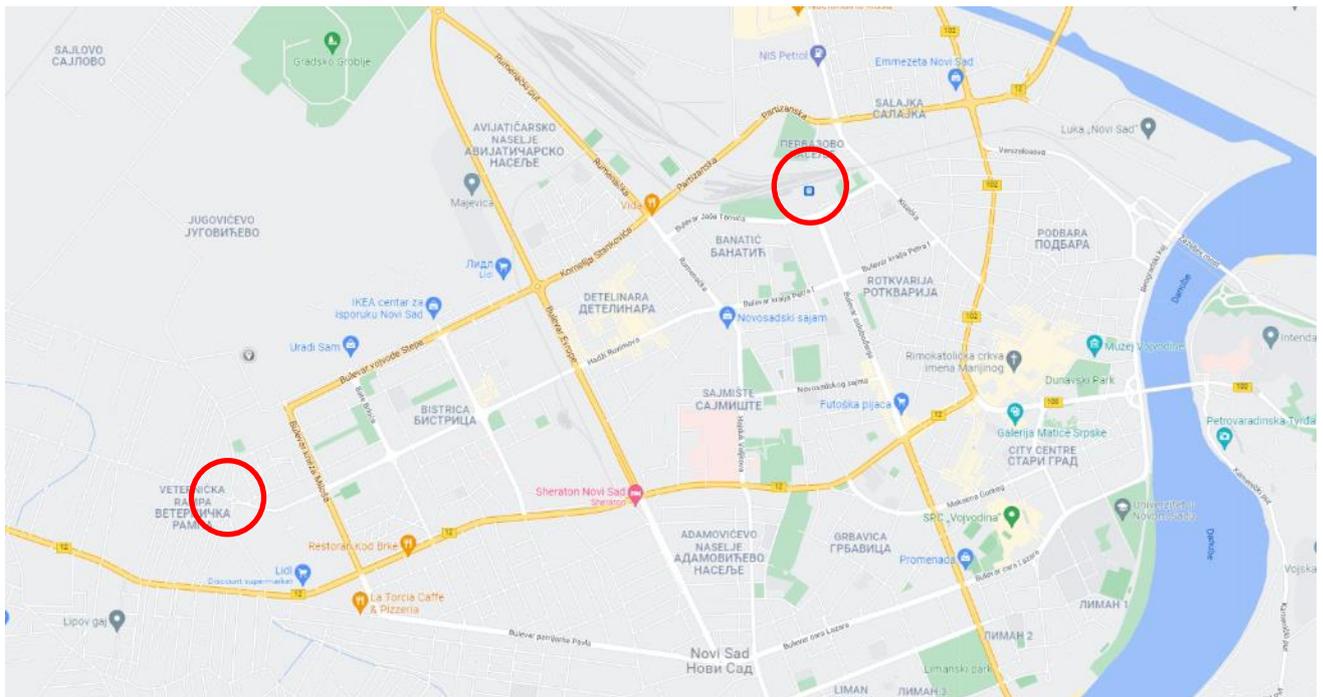
**Figure 1 – Depot Location**



Source: Google Earth (2021)

The Project is currently at an early pre-feasibility stage and the extent and location of infrastructure development has yet to be finalised. However, at this stage, it is anticipated that will be a requirement for electric charging equipment at two locations other than the depot site (Figure 2).

**Figure 2 – Recommended Locations for Charging Equipment**



Source: Google Maps

The current proposed locations are for installation of three fast chargers, each with minimal required rated power for chargers is 450 kW and peak power of 600kW for the pantographs mounted on buses, at the locations specified below.

Next to a roundabout on Bulevar Jovana Dučića-Veternik in the direction towards Novi Sad. The charger will be used for buses on lines 2, 8, and 9. The precise coordinates of the location are: 45.24801099387805, 19.787010998391953 (Figure 3)

**Figure 3 – Novo Naselje: Potential Location for Charging Infrastructure**



Source: Google Earth

The second charger will be installed at the entrance of bus turning point located in front of the Railway Station Novi Sad. This charger will be used for buses on line number 11A going in the direction of Detelinara. Precise coordinates of the location are 45.2650714120484, 19.830000715757304 (Figure 4)

The third charger will be installed at the starting point of line number 4, located at an exit of bus turning point located in front of the Railway Station Novi Sad. This charger will be used for buses on lines 4 and 11B going in the direction of Kisačka Street. Precise coordinates of the location are 45.264886199146254, 19.82948557887959 (Figure 4).

**Figure 4 – Novi Sad Central Station: Potential Location for Charging Infrastructure**



Source: Google Earth

Three service- chargers are also required at the bus depot, each with a nominal power of 50 kW.

The operational development footprint is not considered likely to be extensive – a typical charging station is illustrated in Figure 5.

**Figure 5 – Typical Charging Infrastructure (for illustrative purposes only)**



No permanent changes to road layouts are currently proposed. However, space for parking buses during charging will need to be accommodated and, during construction and installation, temporary disruption to access is likely.

## Overview of the Project and Investment

The City of Novi Sad is continuing to invest in its transport infrastructure and services to incentivise the use of public transport as a sustainable, safer and more environmentally friendly means of meeting mobility demand in the conurbation. The current public urban transport system in Novi Sad is solely comprised of an integrated network of bus lines and it is owned and managed by the Company.

The Company is the municipal-owned transport operator, that provides urban, suburban and intercity transport to the City of Novi Sad and is the sole public transport operator in the City. The Company owns 283 buses, comprising single buses, articulated buses, and minibuses, with diesel and Compressed Natural Gas (CNG) fleets. Depot facilities with CNG fuelling facilities, diesel fuelling facilities, and a range of maintenance activities, support the fleet.

The public transport network of urban bus routes currently operated by the Company (as of August 2021) is illustrated in Figure 6.

Figure 6 – Public Transport Network in the City of Novi Sad



## Current Project Status

As part of the renewal programme, 10 diesel buses will be replaced with the equivalent number of battery electric buses (BEB). The proposed new bus fleet will be deployed on one of the busiest routes (Line 9 and, on Saturdays and Sundays, Line 2) and directly replace EURO 0 and EURO 1 buses which are approaching 30 years of service.

## 2. Key Environmental, Health & Safety and Social Findings

### Overview

In July 2021, an Environmental and Social Due Diligence (ESDD) review was undertaken at the Company on behalf of the European Bank for Reconstruction and Development (EBRD). This ESDD evaluated the environmental and social impacts and benefits of the Project and evaluated them against the following criteria:

- EBRD 2014 Environmental and Social Policy, which includes a comprehensive set of Performance Requirements (PR) covering key areas of environmental and social impacts and issues; and
- Applicable European Union (EU) and National Environmental and Social Requirements.

Where the review has identified the need for further mitigation measures to address impacts or improvements in corporate Environmental, Health and Safety and Social (EHSS) performance, actions have been proposed and incorporated into an Environmental and Social Action Plan (ESAP). This ESAP would enable compliance with relevant corporate, national, EU standards and EBRD PRs. The Project is being designed to fully meet these requirements. Where the ESDD has also identified areas for improvement across the Company site and corporate procedures, these are also included in the ESAP to ensure compliance with EBRD's requirements.

EBRD categorises its investments based on the risks and impacts relating to the relevant sector and in accordance with the EBRD Environmental and Social Policy 2014<sup>2</sup>. Under this Policy, projects are categorised (in decreasing order of potential impact) as A, B, C or FI to determine the nature and level of environmental and social investigations, information disclosure and stakeholder engagement required. This is based on the nature, location, sensitivity and scale of the project, and the significance of its potential adverse future environmental and social impacts. Past and present environmental and social issues and risks associated with project-related existing facilities will be subject to environmental and social appraisal regardless of the categorisation.

The EBRD has categorised the Project as Category B and this has also been verified and confirmed during the ESDD process.

### EHSS Impacts and Mitigation Measures

Table 1 summarises the main potential positive and negative EHSS impacts related to the Project, as well as a summary of the key mitigation measures to ensure that no significant impacts will be realised.

**Table 1: Potential EHSS Impacts Related to the Project**

Environmental Resource	Impact Overview	Mitigation Measures Summary
Project Development (also covering wider associated facilities)		

<sup>2</sup> <https://www.ebrd.com/cs/Satellite?c=Content&cid=1395238867768&d=&pagename=EBRD%2FContent%2FDownloadDocument>. (NOTE – A new EBRD E&S Policy was issued in April 2019, but as required by the EBRD, the previous version has been applied for this project.)

<b>Environmental Resource</b>	<b>Impact Overview</b>	<b>Mitigation Measures Summary</b>
Climate and Air Quality	For installation of charging infrastructure, localised dust generation is anticipated during installation.	Development and implementation of dust mitigation measures during construction.
Noise and Vibration	For installation of offsite charging infrastructure, localised noise generation is anticipated during installation	Development and implementation of noise & vibration mitigation measures during construction.
Water Resources	No significant impacts on groundwater resources or surface water resources are anticipated due to the Project.	Ongoing implementation of existing environmental control measures.
Waste Management	No significant adverse impacts are anticipated to occur from a waste management perspective, as a result of the Project.	Ongoing implementation of existing environmental control measures.
Geology and Land	No significant impacts are anticipated due to the development of the Project.	Ongoing implementation of existing environmental control measures.
Ecosystems and Flora & Fauna	No significant adverse impacts on biodiversity, ecosystems and flora and fauna are anticipated, as a result of the Project. However, for installation of offsite charging infrastructure, there is a very small potential for impact, dependent on final location selected.	Assessment of potential localised impacts to biodiversity should be conducted and appropriate approvals and mitigations put in place, where required by planning regulations
Cultural heritage and archaeology	No significant adverse impacts on cultural heritage are anticipated due to the development of the Project. However, for installation of offsite charging infrastructure, there is a small potential for impact, dependent on final location selected.	Assessment of potential localised impacts to heritage items should be conducted and appropriate approvals and mitigations put in place, where required by planning regulations.
Landscape and visual	No significant adverse impacts on landscape are anticipated due to the development of the Project.	Not applicable.
Social	No significant adverse social impacts are anticipated due to the development of the Project. However, for installation of offsite charging infrastructure, localised temporary access impacts may occur.	Access impacts will be mitigated by means of a Stakeholder Engagement Plan (SEP).
Land Acquisition	Based on current non-finalised designs no requirement for land acquisition is anticipated. However, this should be confirmed once designs are finalised.	If it is identified that land will be acquired and those currently using the land will be negatively impacted, a Land Acquisition and Livelihood Restoration Plan will be developed and implemented prior to construction commencement.

Environmental Resource	Impact Overview	Mitigation Measures Summary
Health and Safety	For installation of offsite charging infrastructure, construction safety risks will be present.	Construction site safety, including controls on access, should be mitigated by contractors by means of safe working procedures.
<b>Project Operation (also covering wider associated facilities)</b>		
Climate and Air Quality	The Project is anticipated to improve air quality through reductions in greenhouse gas and other vehicle emissions	Ongoing implementation of existing environmental control measures.
Noise and Vibration	No significant impacts are anticipated due to the operation of the Project, as bus and depot operation will remain mostly unchanged except for the introduction of new vehicles.	Ongoing implementation of existing environmental control measures.
Water Resources	No significant impacts on groundwater resources or surface water resources are anticipated due to operation of the Project.	Ongoing implementation of existing environmental control measures.
Waste Management	Waste generated by current operations are appropriately managed by authorised contractors. No significant adverse impacts are anticipated to occur from a waste management perspective, as a result of operation of the Project.	Ongoing implementation of existing environmental control measures.
Geology and Land	No significant impacts are anticipated due to operation of the Project.	Ongoing implementation of existing environmental control measures.
Ecosystems and Flora & Fauna	No significant adverse impacts on biodiversity, ecosystems and flora and fauna are anticipated, as a result of operation of the Project.	Ongoing implementation of existing environmental control measures.
Cultural heritage and archaeology	No significant adverse impacts on cultural heritage are anticipated due to operation of the Project.	Ongoing implementation of existing environmental control measures.
Landscape and visual	No significant adverse impacts on landscape are anticipated due to operation of the Project.	Not applicable.
Social	No significant adverse social impacts are anticipated due to operation of the Project. Introduction of new buses is anticipated to provide improved reliability and comfort for drivers and passengers and reduced pollution.	Information about the Project (new buses, timetable etc) and associated operations and activities will be communicated to local communities. The developed SEP will be disclosed to the public.
Land Acquisition	Not applicable at the operational stage.	Not applicable.

Environmental Resource	Impact Overview	Mitigation Measures Summary
Health and Safety	<p>No significant adverse safety impacts are anticipated due to operation of the Project.</p> <p>Introduction of new buses is anticipated to provide improved reliability and comfort for drivers and passengers and reduced pollution,</p>	Ongoing implementation of existing H&S control measures.

### What are the Overall Benefits of the Project?

The Project is expected to improve access and comfortability of the transport system particularly for the vulnerable groups (including the disabled and women with children). The new buses will be all equipped with lifts and thus better access for the wheel chair users and women with children. The new electric buses will and improve public access to public transport particularly on busy routes.

The new buses will also contribute to reductions in air emissions, with CO<sub>2</sub> emissions anticipated to reduce by approximately 25%, and emissions of particulates, NO<sub>x</sub>, CO and hydrocarbons anticipated to reduce by 100%, when compared to equivalent annual bus journeys using existing diesel vehicles.

In addition, an Environmental and Social Action Plan (ESAP) has been developed to align the existing operations and the proposed investment with the EBRD PRs. The proposed action areas will result in improved EHSS performance and benefit from enhancements across the Company operations, as well as Contractors' operations.

## 3. How will Stakeholders be Engaged in the Project?

### What is the Stakeholder Engagement Plan?

A SEP has been developed for the Company with the objective of identifying key stakeholders and ensuring that, where relevant, they are informed in a timely manner of the potential impacts of the Project. The SEP also describes the grievance mechanism to be used by stakeholders for dealing with complaints, concerns and 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 revised and 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;
- Stakeholder engagement programme and methods of engagement and resources; and
- A grievance mechanism.

### Who are the Key Stakeholders?

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 as shown in Table 2:

**Table 2: Key Stakeholders for the Project**

Type	Stakeholder Category	Name	Impact/influence	Preferred Method of Engagement
<b>Project Shareholders / Internal Stakeholders</b>	Primary	<ul style="list-style-type: none"> <li>JGSP employees</li> </ul>	This group will directly impact / influence the project through making decisions at each stage of the process.	JGSP employees, including contractors will be consulted through the HR department and a grievance form is available for use if required.
		<ul style="list-style-type: none"> <li>EBRD</li> </ul>		EBRD will be consulted on different aspects of the Project including environmental and social requirements.
<b>National Government Authorities</b>	Primary	<ul style="list-style-type: none"> <li>Ministry of Environmental Protection</li> <li>Ministry of Labour, Employment, veteran and Social Affairs</li> <li>Ministry of Construction, Transport and Infrastructure</li> <li>Ministry of Agriculture, Forestry and Water Management</li> <li>Ministry of Economy</li> </ul>	This group has direct influence / impact on the project through enforcing regulations and approving relevant permits.	<p>JGSP will be required to submit official letters and e-mails to the relevant authorities as required.</p> <p>JGSP will facilitate meetings with ministries to discuss any issues or concerns regarding permitting, new regulations and project implications.</p>
<b>Local Government Department</b>	Primary	<ul style="list-style-type: none"> <li>City directorate of Traffic and Road</li> <li>City Directorate of Environmental Protection</li> <li>City Directorate of Urban Planning and Construction</li> <li>City Directorate of Communal Affairs</li> <li>City Directorate of Health</li> <li>City Directorate of Social and Child Protection</li> <li>City Directorate of Education</li> <li>City Directorate of Inspectorates</li> </ul>	This group has direct influence / impact on the project through enforcing regulations, monitoring environmental parameters and response plans and approving relevant permits.	<p>JGSP will be required to submit official letters and e-mails to the relevant authorities as required.</p> <p>JGSP will facilitate meetings with key regulators and the City Council to discuss any issues or concerns regarding permitting, new regulations and project implications.</p>
<b>Local Communities - Bus Users</b>	Primary	<ul style="list-style-type: none"> <li>Novi Sad (including all bus users – particularly the users of new buses)</li> </ul>	Communities will benefit from the Project in terms of access to new buses, better comfortability and reduced emissions	JGSP to undertake consultations with the businesses via the local municipality and disclose information on their website about the Project including timetable, new buses and associated activities.

Type	Stakeholder Category	Name	Impact/influence	Preferred Method of Engagement
<b>Local Businesses</b>	Primary	<ul style="list-style-type: none"> <li>Local businesses surrounding the bus routes, including restaurants, shops etc</li> </ul>	Businesses will benefit from the Project in terms of better access for customers using/reaching businesses	JGSP to undertake consultations with the businesses via local municipality and disclose information on their website about the Project including timetable, new buses and associated activities.
<b>Local communities &amp; businesses near offsite charging infrastructure (if required)</b>	Primary	<ul style="list-style-type: none"> <li>Local businesses, residents, road users and other potentially affected persons</li> </ul>	Access restrictions may occur during installation of charging infrastructure (if an offsite location is selected)	JGSP to undertake consultations with potentially affected persons and disclose information on their website about the Project including locations and timescales of infrastructure development.
<b>Universities and Educational Organisations</b>	Secondary	<ul style="list-style-type: none"> <li>Traffic school</li> <li>University of Novi Sad</li> </ul>	Universities and educational organisations could benefit from the Project through internship and apprenticeship programmes	JGSP to collaborate with universities and educational establishments on potential development of graduate programmes and apprenticeship
<b>Non-Governmental Organisations (NGOs)</b>	Secondary	<ul style="list-style-type: none"> <li>Environment Engineering Group ('Inzenjeri Zastite Zivotne Sredine');</li> <li>Arhus Center Novi Sad ('Arhus Centar Novi Sad')</li> </ul>	Local NGOs could influence the Project both directly and indirectly to assist in promotion of sustainable transport through information disclosure and community awareness plans	JGSP to collaborate with local NGOs on promoting the implementation of sustainable transport by raising community awareness
<b>Media</b>	Secondary	<ul style="list-style-type: none"> <li>Radio / newspaper</li> </ul>	The media will have a direct or indirect influence over the Project through publications.	Press releases to disclose project information
<b>Contractors</b>	Primary	<ul style="list-style-type: none"> <li>Maintenance, repair contractors</li> </ul>	This group will have direct influence/impact the project through incorporation of stakeholders' input/comments into contracts and procedures	Legal binding agreement with the Project associated contractors (repair maintenance, etc), to include all the Environmental and Social terms of reference in the contract (whenever relevant)

## What is the Procedure for communicating with Stakeholders?

The SEP outlines the methods that the Company 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. The Company 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; and
- 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 are provided in the SEP.

## 4. Acronyms and Abbreviations Used in this NTS

BEB	Battery Electric Buses
CEMP	Construction Environmental Management Plan
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
E&S	Environmental & Social
EBRD	European Bank for Reconstruction and Development
EHSS	Environmental, Health & Safety and Social
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social Due Diligence
EU	European Union
HR	Human Resources
JGSP	Javno Gradsko Saobraćajno Preduzeće
kW	Kilowatt
m	Metres
NGOs	Non-Governmental Organisations
NO <sub>x</sub>	Nitrogen Oxides
NTS	Non-Technical Summary
PR	EBRD Performance Requirements
SEP	Stakeholder Engagement Plan