

**DOCUMENT OF THE EUROPEAN BANK  
FOR RECONSTRUCTION AND DEVELOPMENT**

Approved by the Board of Directors on 4 December 2024<sup>1</sup>

**SERBIA**

**GrCF3 W2 – NOVI SAD SOLAR-THERMAL PLANT**

*[Redacted in line with the EBRD's Access to Information Policy]*

*[Information considered confidential has been removed from this document in accordance with the EBRD's Access to Information Policy (AIP). Such removed information is considered confidential because it falls under one of the provisions of Section III, paragraph 2 of the AIP]*

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<sup>1</sup> As per section 1.4.8 of EBRD's Directive on Access to Information (2019), the Bank shall disclose Board reports for State Sector Projects within 30 calendar days of approval of the relevant Project by the Board of Directors. Confidential information has been removed from the Board report.

For the avoidance of any doubt, the information set out here was accurate as at the date of preparation of this document, prior to consideration and approval of the project.

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**ABBREVIATIONS / CURRENCY CONVERSIONS**

4DH	Fourth-generation district energy
Ca.	Circa
Capex	Capital Expenditures
CHP	Combined Heat and Power
CO <sub>2</sub>	Carbon dioxide
DH	District Heating
DHC	District Heating Company
DHW	Domestic Hot Water
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
EIRR	Economic Internal Rate of Return
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social Due Diligence
ESIA	Environmental and Social Impact Assessment
EU	European Union
EUR	Euro
EURIBOR	European Interbank Offered Rate
ETI	Expected Transition Impact
FDI	Foreign Direct Investment
GCAP	Green City Action Plan
GDP	Gross Domestic Product
GET	Green Economy Transition
GHG	Greenhouse Gases
GrCF3 W2	Green Cities Framework 3 – Window II
IMF	International Monetary Fund
Km	kilometres
LGD	Loss Given Default
MEI	Municipal and Environmental Infrastructure
MoF	Ministry of Finance
MoME	Ministry of Mining and Energy
MW	Mega-Watt
MWh / GWh	Mega-Watt-hour / Gigawatt hour
NDC	Nationally Determined Contributions
NECP	National Energy and Climate Plan
PD	Probability of Default
PSD	Public Summary Disclosure
PIU	Project Implementation Unit
PP&R	Bank's Procurement Policy & Rules
PV	Photovoltaic
RAROC	Risk-Adjusted Return On Capital
ReDEWeB	Renewable District Energy in the Western Balkans Programme
RES	Renewable Energy Sources
RoS	Republic of Serbia
RSD	Serbian Dinar
SBA	Stand-By Arrangement
TC	Technical Cooperation
WBIF	Western Balkans Investment Framework
YE	Year-end

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1 EUR = 117.0 RSD (November 2024)

## PRESIDENT’S RECOMMENDATION

This recommendation and the attached Report concerning an operation in favour of the Republic of Serbia (“RoS”), are submitted for consideration by the Board of Directors. The facility will consist of a sovereign loan in the amount of up to EUR 105 million for the benefit of Novosadska Toplana (“Novi Sad DHC” or the “Company”), the 100 per cent municipally-owned company operating the district heating (“DH”) network in Novi Sad (the “City”).

The operation will enable Novi Sad DHC to finance the construction of a large-scale solar-thermal plant in Novi Sad, seasonal storage, a heat pump and an electrical boiler (the “Project”). The Project is expected to be co-financed with an investment grant in the amount of up to EUR 20.9 million from the European Union (“EU”) under the Reform and Growth Facility allocation for Serbia, through the Western Balkans Investment Framework (“WBIF”), which is expected to be approved by the EU or relevant donor in early 2025.

The loan will be structured in two tranches as follows: (i) a tranche in the amount of up to EUR 85 million (“Tranche 1”), to be committed at signing; and (ii) a tranche in the amount of up to EUR 20 million (“Tranche 2”), to be committed at the Bank’s sole discretion [REDACTED].

The Project will support Serbia’s efforts to increase the share of renewable energy sources (“RES”) in the total production of heat by integrating solar-thermal and heat pump sources in Novi Sad’s DH system which is currently 100 per cent based on natural gas. The Project will contribute to the sustainable development of Novi Sad, strengthen energy stability and independence, and reduce fossil fuel consumption in the DH system. In addition, the Project will help balance excess electricity generation from wind and photovoltaic (“PV”) solar by utilizing seasonal heat storage and power-to-heat technologies, thereby contributing to the decarbonization of the electricity sector by supporting higher penetration of RES.

The Project is presented under the Green Cities Framework 3–Windows II (“GrCF3 W2”) and is the second follow-on project under the Novi Sad Green City Action Plan (“GCAP”). The expected transition impact of the Project is derived from: (i) the *Green* quality through the introduction of RES in the fuel mix of the City’s DH sector which will lead to the displacement of fossil fuel resulting in a net reduction in air pollutant emission; and (ii) the *Competitive* quality through the deployment of new technology in the DH sector, the first of this kind for the country and a novelty in the region. The Project is Gender Additional through the promotion of equal opportunities and women’s participation in the energy sector in Serbia.

TC support for project preparation for this operation was provided by the Government of Austria under the Renewable District Energy in the Western Balkans Programme (“ReDEWeb”) and by the WBIF. TC support for project implementation and works supervision is expected to be provided by the WBIF.

I am satisfied that the operation is consistent with the Bank’s Strategy for Serbia, the Bank’s Municipal and Environmental Infrastructure (“MEI”) Sector Strategy, the Bank’s Green Economy Transition (“GET”) Approach 2021-2025, the Strategy for the Promotion of Gender Equality, and with the Agreement Establishing the Bank. I recommend that the Board approve the proposed loan substantially on the terms of the attached Report.

**Odile Renaud-Basso**

## BOARD DECISION SHEET

<b>SERBIA – GrCF3 W2 – Novi Sad Solar-Thermal Plant – DTM 54524</b> <b>Framework: Green Cities Framework 3 – Window II – DTM 55845</b>	
<b>Transaction / Board Decision</b>	<p>Board approval<sup>2</sup> is sought for a sovereign loan in the amount of up to EUR 105 million in favour of the Republic of Serbia (“<b>RoS</b>” or the “<b>Borrower</b>”) for the benefit of Novosadska Toplana Novi Sad (“<b>Novi Sad DHC</b>”, the “<b>Client</b>” or the “<b>Company</b>”), a district heating municipal public utility company, 100 per cent owned by the City of Novi Sad (the “<b>City</b>”). The loan will be used to finance the construction of a large-scale solar-thermal plant in Novi Sad with approximately 38,600 m<sup>2</sup> (31 MW) of solar collector fields, seasonal storage with a volume of approximately 870,000 m<sup>3</sup>, a heat pump with a capacity of 17 MW, and an electrical boiler (“<b>eBoiler</b>”) of 60 MW (the “<b>Project</b>”).</p> <p>The Project is expected to be co-financed with an investment grant in the amount of up to EUR 20.9 million from the European Union (“<b>EU</b>”) under the Reform and Growth Facility allocation for Serbia, through the Western Balkans Investment Framework (“<b>WBIF</b>”), which is expected to be approved by the EU or relevant donor in early 2025. The loan will be structured in two tranches as follows: (i) a tranche in the amount of up to EUR 85 million (“<b>Tranche 1</b>”) to be committed at signing; and (ii) a tranche in the amount of up to EUR 20 million (“<b>Tranche 2</b>”) to be committed at the Bank’s sole discretion [REDACTED].</p> <p>The Project is presented as a follow-on investment under the Green Cities Framework 3 – Windows II (“<b>GrCF3 W2</b>”).</p>
<b>Client</b>	<p>The Borrower is the RoS, represented by the Ministry of Finance (“<b>MoF</b>”). The Client and beneficiary is Novi Sad DHC, the municipal utility company in charge of operating the DH network in Novi Sad. In 2023, Novi Sad DHC generated revenues of EUR 82.4 million [REDACTED].</p> <p>The Project will be implemented by the Company with the support of the Ministry of Mining and Energy (“<b>MoME</b>”) and the City.</p>
<b>Main Elements of the Proposal</b>	<p><u>Transition impact:</u></p> <p><b>-Primary – Green:</b> The Project will introduce RES and energy storage technologies in the DH energy mix in Novi Sad, which will enable the production of cleaner energy in the DH network, resulting in net reduction of air pollutant emissions.</p> <p><b>-Secondary – Competitive:</b> The Project will enable the construction of a solar-thermal plant with a large-scale seasonal heat energy storage and Power to Heat (“<b>PtH</b>”) technology, to be integrated into the City’s DH network, which is an innovative technology for the region and the first of this kind for Serbia.</p> <p><u>Additionality</u> – (i) The Bank offers longer-term financing that is not available in the market from commercial sources on reasonable terms and conditions necessary to structure this investment project; (ii) the Bank helps the Client to mitigate carbon transition risks and take climate action, such as moving along a low carbon transition pathway; (iii) the Bank’s involvement will trigger a regulatory change in the sector; (iv) the Bank will provide its expertise on higher environmental standards and energy and resource efficiency and climate resilience; (v) the Bank will help set standards to promote equal opportunities and women’s participation in the energy sector (Gender SMART) and, (vi) the Bank will strengthen the capacity of the Client.</p> <p><u>Sound banking</u> – Sovereign loan.</p>
<b>Key Risks</b>	<p>The key risk factors are: (i) <b>Sovereign and macro-economic risk</b>, mitigated by the positive track record in terms of macroeconomic stability of the country and its good country rating; and, (ii) <b>Implementation risk</b> mitigated by the appointment of a project implementation unit (“<b>PIU</b>”) supported by an independent procurement consultant to ensure EBRD’s PP&amp;Rs are complied with.</p>
<b>Strategic Fit Summary</b>	<p>The Project is consistent with (i) the Bank’s Municipal and Environmental Infrastructure (“<b>MEI</b>”) Sector Strategy, (ii) the Bank’s Country Strategy for Serbia, (iii) the Green Economy Transition (“<b>GET</b>”) Approach 2021-2025, (iv) Strategy for the Promotion of Gender Equality.</p>

<sup>2</sup> Article 27 of the AEB provides the basis for this decision.

## ADDITIONAL SUMMARY TERMS FACTSHEET

<b>EBRD Transaction</b>	A sovereign loan in the amount of up to EUR 105 million to the RoS for the benefit of Novi Sad DHC to finance the development and construction of a large-scale solar-thermal plant in Novi Sad with approximately 38,600 m <sup>2</sup> (31 MW) of solar collector fields, seasonal storage with a volume of approximately 870,000 m <sup>3</sup> , a heat pump with a capacity of 17 MW and an electrical boiler (eBoiler) of 60 MW (the “ <b>Project</b> ”). The loan is divided into two tranches: (i) Tranche 1 in the amount of up to EUR 85 million; and (ii) Tranche 2, uncommitted, in the amount of up to EUR 20 million, to be committed at the Bank’s discretion [REDACTED] The Project is presented under GrCF3 W2, as the second follow-on investment for Novi Sad aiming at supporting the objectives and the implementation of shortlisted actions of the GCAP, currently being developed.
<b>Existing Exposure</b>	<u>Existing Exposure to the RoS:</u> As of November 2024, the Bank’s sovereign portfolio/exposure to the RoS is EUR 1,204.9 million [REDACTED].
<b>Maturity / Exit / Repayment</b>	15-year tenor [REDACTED].
<b>Potential AMI eligible financing</b>	None.
<b>Use of Proceeds - Description</b>	The loan proceeds will be used to finance the construction of a large-scale solar-thermal plant in Novi Sad with approximately 38,600 m <sup>2</sup> (31 MW) of solar collector fields, seasonal storage with a volume of approximately 870,000 m <sup>3</sup> , a heat pump with a capacity of 17 MW and an eBoiler of 60 MW. In case the WBIF TC grant for project implementation support and works supervision is not approved, loan proceeds will be used to finance the PIU support and works supervision services.
<b>Investment Plan</b>	[REDACTED]
<b>Financing Plan</b>	[REDACTED]
<b>Key Parties Involved</b>	<ul style="list-style-type: none"> <li>• Borrower: RoS, represented by the MoF;</li> <li>• Beneficiary and implementing entity: Novi Sad DHC, supported by the MoME and the City.</li> </ul>
<b>Conditions to subscription / disbursement</b>	[REDACTED]
<b>Key Covenants</b>	[REDACTED]
<b>Security / Guarantees</b>	Sovereign loan.
<b>Other material agreements</b>	<ul style="list-style-type: none"> <li>• Project Agreement, between the Bank, the Borrower (represented by the MoME) and Novi Sad DHC;</li> <li>• Project Support Agreement between the Borrower (represented by the MoME), Novi Sad DHC and the City;</li> <li>• WBIF Investment Grant Agreement.</li> </ul>
<b>Associated Donor Funded TC and Blended Concessional Finance</b>	<p><b><u>Technical Cooperation (TC):</u></b></p> <p><i>Pre-signing:</i></p> <ul style="list-style-type: none"> <li>• <b>TC 1.</b> Pre-feasibility study and options analysis for integrating solar-thermal capacity in Novi Sad DH system. TC amount: EUR 74,630 funded by Government of Austria under ReDEWeb. <i>Completed.</i></li> <li>• <b>TC 2.</b> Feasibility study, environmental and social impact assessment (“ESIA”), and preliminary design, in the amount of EUR 684,400, funded by the WBIF. <i>Completed.</i></li> </ul>

	<p><i>Post-signing:</i></p> <ul style="list-style-type: none"> <li>• <b>TC 3.</b> PIU support (procurement support, supervision of works, project management) in the amount of EUR 3,140,000, expected to be financed by the WBIF. [REDACTED]</li> </ul> <p>The Borrower is expected to make a parallel contribution in the form of payment of any VAT (currently at 20%), associated with the goods, works and services and post-signing TC assignments.</p> <p><b><u>Co-investment grants / Concessional Finance (Non-TC):</u></b></p> <p><b><u>Investment Grant:</u></b></p> <p>The Borrower has applied to the WBIF for an investment grant in the amount of EUR 20,900,000 [REDACTED]. Public infrastructure investments co-financed with investment grants under the WBIF are exempt from the Blended Concessional Finance Guidelines.</p>
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[REDACTED]

## INVESTMENT PROPOSAL SUMMARY

### 1. STRATEGIC FIT AND KEY ISSUES

#### 1.1 STRATEGIC CONTEXT

Serbia's DH system is highly dependent on fossil fuels, especially natural gas. Approximately 80 per cent of the fuel mix is natural gas, of which, 90 per cent is imported. The sector is therefore in urgent need of decarbonisation, both to address environmental concerns and to strengthen resilience in order to ensure energy security.

Although Novi Sad has one of the most modern DH systems in the region, characterized by high efficiency (88 per cent for the last five years), it still predominantly relies on natural gas. Considering the potential challenges related to natural gas supply uncertainties (closure of the Russian gas transit through Ukraine, risks in cost planning, uncertainties surrounding the Balkan Stream gas pipeline) and the City's (but also the country's) commitment to reducing dependence on fossil fuels for environmental reasons, it becomes crucial for Novi Sad to establish a base source of heat energy independent of fossil fuels, even more knowing that on average, heating services are provided around 204 days a year.

The Project represents an innovative solution to the challenges mentioned above. By efficiently incorporating renewable energy into the DH energy mix, ca. 20 per cent of the City's heating needs would be met through the ca. 29,000 MWh of clean renewable solar energy produced by the new plant. The Project will also include solar thermal collectors, large-scale seasonal heat storage, Power to Heat solutions (eBoiler), and large-scale heat pump and will help the City decarbonise its district heating network while contributing to its energy security and increasing service affordability and financial stability of the Novi Sad DHC. Additionally, the Power to Heat boiler is envisaged to function as a Secondary/Automatic Frequency Restoration Reserve ("**aFRR**") or Tertiary/Manual Frequency Restoration Reserve ("**mFRR**"). Therefore, the joint operation of seasonal heat energy storage and eBoiler/heat pump will enable utilisation of the facility for balancing excessive electricity production from wind and solar PV in periods when negative electricity prices need to be tackled by utilisation of seasonal energy storage technologies (May to October).

The Project is also a follow-on project under EBRD Green Cities that Novi Sad joined in 2019 and, aims at supporting the objectives and the implementation of shortlisted actions of the GCAP, currently being developed. One of the strategic objectives includes going "Towards Net-Zero Emissions" and counting the current transaction as one of the priority investments. The solar thermal system coupled with the storage system, directly contributes to GHG emissions reduction by replacing fossil-fuel based energy (heat) generation (resulting in a net Scope 1 emission reduction). While the other components of the Project also support decarbonisation of the DH system, their immediate link to emissions reduction is less direct. This is primarily due to the electricity consumption required for the operation of heat pumps and e-boilers. Currently, Serbia's electricity grid is predominantly fossil fuel-based, with approximately 70% of electricity generation coming from these sources. As a result, the electricity used by these new components leads to an increase in emissions (Scope 2 emission increase). The Project is expected to lead to a reduction in Scope 1 CO<sub>2</sub> emissions and air pollutants by approximately 95 per cent.

The Project is therefore consistent with the following strategies:

- the Bank's Strategy for Serbia by increasing "*renewable energy capacity*", favouring a "*more diversified energy mix*" and supporting investments for "*climate resilience, mitigation and decarbonisation*" and for "*improved quality, sustainability [...] of municipal infrastructure*".

- the Bank’s Municipal and Environmental Infrastructure (“MEI”) Sector Strategy that acknowledges that “*MEI strives to incorporate renewable energy options in its projects*” and includes the use of renewables as a key developing strategic direction for the district heating sector, with focus on quality, resource efficiency, reduced environmental impact;
- The Green Economy Transition (“GET”) approach, which acknowledges the importance of continuing activities in renewable energy for sustainable infrastructure.
- The EBRD’s Strategy for the Promotion of Gender Equality (“SPGE”) by promoting equal opportunities and gender parity.

## 1.2 TRANSITION IMPACT

GrCF3 represents a strategic and multi-project approach seeking to help identify and address environmental challenges in selected large cities in our countries of operation. The primary goal is to achieve significant environmental improvements and to promote the *Green* transition quality within the relevant cities. In addition to the environmental objective, GrCF3 also promotes sustainable cities through inclusive, resilient, well-governed, and smart urban development. Depending on the area that can generate the strongest and most relevant transition impact, either *Well-governed*, *Inclusive*, *Resilient*, *Competitive*, or *Integrated* will be pursued and presented as the secondary transition quality for each sub-Project under the framework. These transition objectives are supported by the development and implementation of a city-specific GCAP aiming to identify environmental challenges, facilitate better coordination and buy-in among stakeholders and help to prioritise and develop the best ways to address the environmental challenges through targeted investments, services, and policy instruments.

The Project will primarily help to promote the *Green* transition quality by supporting Serbia’s efforts to increase the share of RES in the total production of heat by integrating solar-thermal and heat pump sources in the Novi Sad DH system. Integrating heat sources from a solar-thermal, heat pump and PtH sources will spur a sustainable transformation into a fourth-generation district energy system (“4DH”). Through the generation of clean energy in the City’s DH sector, it will contribute to the sustainable development of Novi Sad and strengthen its energy stability and independence while reducing natural gas consumption and CO<sub>2</sub> emissions within the DH system. By displacing natural gas in the system, the Project is expected to lead to significant reduction in air pollutant (NO<sub>x</sub>, SO<sub>2</sub> and PM) emissions by 95 per cent compared to baseline, thus is eligible for inclusion under the GrCF3 W2. The Project also benefits from an ETI uplift from 70 to 75 as NO<sub>x</sub> savings are expected to reach 95 per cent (compared to an uplift threshold of -80 per cent). As a follow-on investment, the Project is in line with the priorities included in the GCAP for the City of Novi Sad that is currently under development and supports the GCAP’s strategic objective of “Towards Net-Zero Emissions”, which aims at accelerating green energy transition, smart design, and greener public services. The Project directly supports the implementation of a shortlisted energy sector action in the GCAP, namely, “implement medium and large plants for the production of both electricity and heat”. Solar-thermal, seasonal energy storage, heat pump and eBoiler technologies are envisaged as the main solution for the decarbonisation of the DH system and as one of the development priorities for the City as well as the Novi Sad DHC. *Please refer to Annex 4 for the Green Assessments summary.*

The Project will also support the *Competitive* objective by introducing and deploying innovative technology in the DH sector, both in the country and the region. According to a report by the CEE Bankwatch Network, 97 per cent of heat supplied in district networks across the Western Balkans currently comes from fossil fuels, with renewables accounting for only ca. 3 per cent, primarily from biomass. While solar DH has gained traction in Europe, with roughly 200 systems implemented (mostly lacking seasonal heat storage), Pristina in Kosovo is the only city in the region to have implemented

such a technology, currently under implementation, however; without PtH component envisaged. The Project will be a *pioneering initiative in the Western Balkans and one of the largest globally* - to incorporate and integrate a large-scale solar thermal collector field, large-scale seasonal heat storage, heat pump, and eBoiler to generate renewable electricity and balance excessive RES electricity production. The Project is also Gender Additional as it aims to advance gender equality in the sector by targeting gender parity in both the student internship programme and new hires for the new plant.

**Delivery Risks:** The main risks to transition impact relate to: (i) City's capacity/willingness to develop and implement the GCAP recommendations; and (ii) the Client's willingness and ability to implement the GCAP and the associated performance improvement measures. These risks are mitigated by the following factors: (a) EBRD Green Cities is fully operational, and includes lessons learned on engagement with cities/clients, [REDACTED]; (b) loan documentation includes the appropriate covenants and projects are supported by technical cooperation, where appropriate; and (c) the EBRD continues to engage in policy dialogue with governments and to sponsor Green Cities events to facilitate knowledge sharing.

### 1.3 ADDITIONALITY

Identified triggers*	Description
[REDACTED]	[REDACTED]

Additionality sources	Description / Evidence
<b>Financing structure</b> <ul style="list-style-type: none"> <li>EBRD offers a <b>tenor</b>, which is longer than available to the client in the market on reasonable terms and conditions.</li> <li>EBRD offers financing that is not available in the market from commercial sources on reasonable <b>terms and conditions</b>, e.g. a longer grace period. Such financing is necessary to structure the project.</li> </ul>	The Bank is providing a sovereign loan with a tenor of 15 years including a grace period [REDACTED], which is not available from commercial sources.
<b>Risk mitigation</b> <ul style="list-style-type: none"> <li>EBRD helps the client mitigate <b>carbon transition risks</b> and take climate action, such as moving along a low-carbon transition pathway.</li> </ul>	The development of the solar-thermal plant will introduce the use of renewable energy sources in the heating source mix in Novi Sad, contributing to a cleaner DH sector and reducing air pollutant emissions in the City, and supporting the country in decarbonising the DH sector.
<b>Policy, sector, institutional, or regulatory change</b> <ul style="list-style-type: none"> <li>EBRD's involvement in a project is considered additional when it is designed to trigger a change in the policy, sector, institutional or regulatory framework, or enhance practices at the sector or country level (e.g., an introduction of cost-reflective pricing of energy, water, etc.).</li> </ul>	The Project will support the development of a regulatory framework to stimulate further development and decarbonisation of the DH sector in Serbia.
<b>Standard-setting: helping projects and clients achieve higher standards</b> <ul style="list-style-type: none"> <li>Client seeks/makes use of EBRD expertise on <b>higher environmental standards</b>, above 'business as usual' (e.g.</li> </ul>	An environmental and social action plan ("ESAP") will be agreed upon with the MoME based on the environmental and social due diligence ("ESDD"). Actions

<p>adoption of emissions standards, climate-related ISO standards, etc.).</p> <ul style="list-style-type: none"> <li>– Client seeks/makes use of EBRD expertise over <b>energy and resource efficiency and climate resilience</b> financing via the provision of energy and climate audits, minimum performance standards of technologies, climate-related strategies and policies, monitoring, reporting, and verification (MRV) systems, etc.</li> <li>– Client seeks/makes use of EBRD expertise to <b>promote equality of opportunity</b> and offer skills development and career opportunities to women.</li> </ul>	<p>under the ESAP are expected to go beyond local requirements.</p> <p>The Project includes ambitious policy dialogue TCs which will assist the Serbian authorities in meeting their targets and obligations as part of the EU accession process and Paris Agreement. The Project includes ambitious targets to reach gender parity among technical students participating in the annual internship programme [REDACTED] as well as gender parity among the new employees to be hired to operate the new plant [REDACTED].</p>
<p><b>Knowledge, innovation, and capacity building</b></p> <ul style="list-style-type: none"> <li>- EBRD provides expertise, innovation, knowledge and/or capabilities that are material to the timely realisation of the project's objectives, including support to <b>strengthen the capacity of the client</b>.</li> </ul>	<p>The appointment of the external procurement consultant will enhance the capacity of the Company and City as it will provide training to the PIU members who are employees of the Company and a representative of the City. The training will enable the PIU members to become familiar with EBRD's PP&amp;Rs and best practices regarding carrying out public competitive international tenders.</p>

#### 1.4 SOUND-BANKING - KEY RISKS

Risks	Probability / Effect	Comments
Sovereign risk / Macro-economic risk	<i>Medium / High</i>	<p>RoS will service the loan's debt repayment. As such, the fiscal and macroeconomic situation of Serbia has a direct impact on the capacity to service the debt.</p> <p><b>Mitigant:</b> Serbia's rating (BBB-/BB+/Ba2) is underpinned by a track record of macroeconomic stability and a credible policy framework. In October S&amp;P upgraded Serbia's rating from BB+ to BBB-, with stable outlook, on the back of strong growth, and increased external buffers. The exchange rate vis-a-vis EUR is managed very tightly, supported by the adequate level of international reserves and robust FDI inflows (net FDI inflows of EUR 2.8 billion in the first seven months of 2024). Public debt stood at 50.3 per cent of GDP in July 2024 and is expected to get to 43.8 per cent of GDP (becoming compliant with the 45 per cent threshold set pre-pandemic) in 2028. The foreign currency debt risk is mitigated by the long average maturity of outstanding debt, the high share of fixed interest rate debt, and multilateral and institutional creditors in external debt.</p>
Cost overrun risk	<i>Medium / Medium</i>	<p>The risk of cost increases is linked to recent inflationary pressures. Delays in the Project would increase that risk.</p> <p><b>Mitigant:</b> This risk has been adequately mitigated by the incorporation of technical and financial contingencies. Moreover, the Project is a priority for the Government of Serbia ("GoS") and is adopted by the Government's Commission for Capital Investments as one of the priority projects contributing to reforms in the energy sector. Therefore, the GoS and the City of Novi Sad will provide all necessary support for the Project to be implemented within the set timeline.</p>

Implementation risk	<i>Medium / High</i>	[REDACTED]. <b>Mitigant:</b> This is a sizeable Project, and [REDACTED], this risk will be mitigated by the mobilisation of (i) independent PIU consultants who will be engaged to provide support with the entire project tendering, procurement, implementation, monitoring and reporting and (ii) independent works supervision. Additionally, the MoME has experience with the EBRD implementation process from the Bank's previous projects, and will be supporting the Company throughout the Project's implementation.
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## 2. MEASURING / MONITORING SUCCESS

As a sub-project under GrCF3, the Project will be monitored individually. Information collected at sub-project level will be aggregated and used to inform framework level monitoring.

Primary quality: Green						
Obj. No.	Monitoring Indicator	Details	Baseline	Target	Due date	TC-related
1.1	Total Population benefitting (individuals)	Total Population benefitting from the new solar-thermal plant	0	368,967	[REDACTED]	[REDACTED]
1.2	Renewable Energy Capacity Installed (MW)	The project is expected to contribute to the installation of 31 MW of renewable energy capacity.	0	31	[REDACTED]	[REDACTED]
1.3	Air pollutant emission savings (tonnes/yr)	The project is expected to result in a reduction of SO <sub>x</sub> by 0.11 tonnes/year	0	0.11	[REDACTED]	[REDACTED]
1.4	Air pollutant emission savings (tonnes/yr)	The project is expected to result in a reduction of NO <sub>x</sub> by 39.38 tonnes/year	0	39.38	[REDACTED]	[REDACTED]
1.5	Air pollutant emission savings (tonnes/yr)	The project is expected to result in a reduction of PM emissions by 0.39 tonnes/year	0	0.39	[REDACTED]	[REDACTED]

Secondary Quality: Competitive						
Obj. No.	Monitoring Indicator	Details	Baseline	Target	Due date	TC-related
2.1	Operational Performance of the client: cost savings	The Project will enable the construction of the first solar thermal-plant in Serbia and lead to average annual savings in total energy production costs of 6.2 per cent.	0	6.2%	[REDACTED]	[REDACTED]

**Additional indicators**

Objective	FW level aggregate indicator	Indicator (sub-Project)	Details for Specific Sub-Project	Baseline	Target	Due date	TC-related
<b>Gender SMART indicator</b>	Practices of the relevant stakeholder improved (equal opportunity practices of the client)	Practices of the relevant stakeholder improved (equal opportunity practices of the client)	The client will increase the share of women in the student internship programme [REDACTED] and [REDACTED] among the new hires to operate the new plant (currently 25% of the engineers are female).	No	Yes	[REDACTED]	[REDACTED]

### 3. KEY PARTIES

#### 3.1 BORROWER

The Borrower is the RoS, represented by the MoF.

Serbia is the highest-rated and most resilient economy in the Western Balkans. After a moderate growth of 2.6 per cent in 2022, and acceleration to 3.8 per cent in 2023 (according to newly revised data on GDP), GDP growth picked up to 4.3 per cent in H1 2024 driven by services (retail trade, catering and tourism) and construction which recorded double-digit growth. The economic growth is expected to rise nearer its medium-term potential at 3.8 per cent in 2024, and further to 4 per cent in 2025. Serbia remains attractive with net FDI inflow amounting to EUR 2.8 billion in the first seven months of 2024. Fiscal policy has so far been sound, with decreasing deficit from the level of 7.7 per cent of GDP during the pandemic, to 2.1 per cent of GDP in 2023 (EUR 1.5 billion). A surplus of around EUR 220 million was recorded in first eight months of 2024, but the Fiscal Strategy envisages a deficit of 2.2 per cent of GDP at the end of the year.

Inflation is slowing down (12.4 per cent in 2023 vs 4.9 per cent in the first eight months of 2024) although more slowly than in peer countries. The authorities employed monetary and fiscal policy measures to support the economy in light of still-high inflation. Monetary policy remains tight with the policy rate slightly reduced from the peak of 6.5 per cent to 5.75 per cent in September 2024. A new set of measures announced for the second half of 2024, on the other hand, are easing the fiscal stance by increasing pensions, minimal wages, and average public sector wages. Despite the expansionary policy, the fiscal deficit is to remain at the same level as in 2023 (at 2.2 per cent of GDP), and the IMF assessed the public debt as sustainable.

While remaining above the 45 per cent of GDP threshold, public debt has been falling since 2015 and was at 50 per cent of GDP in H1 2024 (vs. 52.3 per cent at YE2023). It is set to gradually decline to 43.8 per cent of GDP in 2028, conditional on the implementation of feasible fiscal adjustment measures, including those part of the SBA, according to the IMF, which in its July 2024 risk assessment classified likelihood and impact of sovereign debt distress as medium, mitigated by the record high reserves, a steady base of external official and domestic creditors, and manageable fiscal deficits.

Serbia has just received its first investment rating by S&P in October 2024, when they upgraded the long-term sovereign rating to BBB- from BB+, with stable outlook, on the back of strong growth prospects, moderate public debt and increasing foreign reserve assets. Rating by Moody's is at Ba2 (Positive) upgraded from Stable in September 2024 and by Fitch at BB+ (Positive), upgraded from Stable in August 2024.

*More information is provided in Annex 3.*

#### 3.2 CITY OF NOVI SAD

Novi Sad is the second largest city in Serbia and the capital of the autonomous province of Vojvodina, in the northern part of the country. Lying on the banks of the Danube River and covering an area of 699 m<sup>2</sup> (with an urban area of 129.7 km<sup>2</sup>), it is the fifth largest city on the Danube. The City had ca. 367,000 inhabitants based on the latest census in 2022, out of whom 41.59 per cent were women. It is a dynamic city that has experienced significant growth in the past two decades, increasing the number of inhabitants by 35 per cent. Novi Sad is a young and creative city and was designated as the European Youth Capital in 2019, the European Capital of Culture in 2022 and it also became a

UNESCO Creative City of Media Arts in 2023. It is an important industrial and financial centre of the Serbian economy and one of the key economic hubs.

In September 2024, Moody's confirmed its rating of Ba2 and upgraded its outlook from "stable" to "positive". The City continuously demonstrates strong operational performance, low and declining debt levels and adequate liquidity. In 2023, Novi Sad achieved revenues of 337.7 million (11.3 per cent increase compared to 2022) and a current surplus of EUR 55.5 million (vs. EUR 55.6 million in 2022). Total debt at the end of 2023 stood at EUR 35.9 million while the current surplus for 2023 amounts to EUR 51.5 million, therefore, the City has ample debt capacity, and its conservative borrowing approach resulted in strong financial profile.

Novi Sad joined the EBRD Green Cities programme in 2019 (SGS19-490 GrCF2 W2 – Novi Sad Bus Fleet Renewal for an amount of EUR 7 million) and has since then signed a follow-on investment (OpID 53206 GrCF2 W2 – Novi Sad Electric Buses signed in 2021 for an amount of EUR 7.4 million). Both projects have been successfully implemented.

### **3.3 CLIENT - NOVI SAD DHC**

Novi Sad DHC was created in 1961 and is 100 per cent owned by the City. The Company is in charge of the operations of the DH system and the provision of DH services in the City. It operates a pipe network of ca. 240 km to cater to the needs of ca. 113,000 customers (93 per cent residential customers, and 7 per cent business customers), as well as a network with 20,000 heat meters and ca. 3,060 primary heat substations. Novi Sad DHC has a production capacity of ca. 1,030 MW, including the capacity of a combined heat and power plant ("CHP Novi Sad").

The Company employs 320 people. In 2023, the Company achieved revenues of EUR 82.4 million, mostly stemming from the provision of heating services (97% of total operating revenue in 2023). [REDACTED].

## **4. MARKET CONTEXT**

### **DH in Serbia**

The DH sector in Serbia is composed of 60 operating DH systems with a total installed capacity of 5,869MW and 6,731GWh of supplied heat annually, where ca. 80 per cent is distributed to households and 20 per cent to commercial and public buildings. The total length of the heat distribution network is 2,776 km supplying a total of 27,236 thermal substations. A 78 per cent of the surface area heated by DH systems is for residential consumers and 22 per cent for businesses. The Serbian DH sector is heavily dependent on fossil fuels (around 98 per cent with a dominance of natural gas which represents 78 per cent of energy sources) enhancing environmental and social risks (the DH sector in Serbia is highly polluting with annual CO<sub>2</sub> emissions of ca. 1.5 million tons), as well as supply risk. Penetration of renewables and waste heat remains very low although projects to integrate RES have started recently.

### **DH in Novi Sad**

Novi Sad has one of the most modern systems for the production, distribution and supply of heat energy in this part of Europe. The City's district heating system has been developed since 1961 and covers 76 per cent of the City. The Novi Sad DH system only uses fossil fuels so far (13 out of 21

boilers use natural gas, which represents 71 per cent of total production, while the remaining ones use a mix of natural gas and fuel oil).

The provision of DH services boasts an efficiency percentage of 89 per cent for the past five years. According to World Bank data, the Novi Sad DHC stands out as one of the most productive European companies for district heating, achieving an impressive productivity indicator of 3.5 GWh per employee. This has been made possible with important investments over the past decades (replacement of pipes, modernization of substations) and real-time management through an integrated and sophisticated software platform.

The DH system comprises six district heating plants and a CHP Novi Sad plant, which serves the dual purpose of electricity and heat production. Furthermore, the production of domestic hot water (“**DHW**”) is carried out by two highly efficient cogeneration power plants, namely CHP West and CHP South, boasting a combined capacity of 14 MWe (electricity) and 14 MWt (thermal energy).

### **Decarbonisation regulation**

By adopting the National Strategy for Accession to the European Union, Serbia has begun the process of harmonizing its national regulations with EU regulations. This, *inter alia*, includes aligning national legislation with EU environmental legislation, energy efficiency, and increasing the share of renewables. Several national policy documents have been adopted, including the Energy Development Strategy of Serbia or the Integrated National Energy and Climate Plan (“**NECP**”) that was adopted in July 2024, pushing for the increase of RES in the energy mix and setting a target of 41.1 per cent by 2030 for the renewable energy share in the heating and cooling sector (vs 26.7 per cent in 2019).

## **5. FINANCIAL / ECONOMIC ANALYSIS**

### **5.1 FINANCIAL ANALYSIS**

[REDACTED]

### **5.2 ECONOMIC ANALYSIS**

[REDACTED]

### **5.3 PROJECTED PROFITABILITY FOR THE BANK**

[REDACTED]

## 6. OTHER KEY CONSIDERATIONS

### 6.1. ENVIRONMENT

Categorised B (2019 ESP). Environmental and social impacts are site specific, readily identified and addressed through effective mitigation measures proposed. The Project will support the decarbonisation of the DH network. ESDD was conducted by an independent consultant, including a company audit and assessment of environmental and social (“E&S”) project risks and impacts in line with EBRD's E&S Policy and Performance Requirements (“PRs”). The ESDD findings showed that the Company has an Integrated Management System (“IMS”) aligned with ISO standards. According to national legislation, a set of permits will be needed for the Project such as Opinion on Environmental Impact Assessment (“EIA”), Energy Permit, Construction Permit, and Use Permit. The PIU, established in December 2023 and supported by the City Administration for Environmental Protection, will be responsible for the Project’s management. A project-specific Environmental and Social Management Plan (“ESMP”) has been prepared for the Project as part of the ESDD. ESDD has identified areas for improvement required to structure the Project to align with the Bank's 2019 PRs. These have been included in the ESAP which has been agreed with the Company.

The Company fully complies with the national Labour Law and it has a set of well-defined HR policies and procedures that comply with PR2. The Contractors will be required to comply with the national labour law, as well as to implement an internal grievance mechanism for workers to fully comply with PR2, as stipulated by the ESAP. The Project does not include the use of solar PV technology nor polysilicon as the main materials used for production of solar collectors are steel, glass, teflon and plastics. Nevertheless, ESAP stipulates the measures for supply chain risk management.

At the start of the Project, the Seasonal Pit Thermal Energy Storage (“PTES”) will be filled with treated water (capacity of approx. 850.000 m<sup>3</sup>) from the Danube River, produced within existing facilities of CHP Novi Sad. The water within the PTES will remain stored throughout its lifetime, with only minimal losses due to evaporation, requiring occasional replenishment. There is a risk of groundwater intrusion during the excavation for the underground part of PTES, therefore, appropriate design measures must be implemented in line with ESAP. The Project-specific ESMP includes appropriate measures for pollution prevention and managing hazardous substances during both construction and operation and maintenance phases. Waste will be generated throughout all phases of the project and development of waste management plans for each Project phase is mandatory in line with ESAP. On-site supervision of Contractor practices and adherence to waste management laws must be ensured in line with the ESAP.

An 8-meter embankment has been erected along the Danube River, designed to withstand 100-year flood events. For pluvial floods, a drainage canal network and a pumping station are in place to transfer collected water into the Danube River. Accounting for current and future predicted climate change scenarios, the existing flood protection measures within the Project area have been deemed sufficient. The PTES system has been initially designed with a high level of safety and stability, minimising any potential risk of embankment breach. The stability of the embankment has been considered in the Feasibility Study. Given the substantial size and mass of the embankments, the risk of a breach is deemed highly improbable. The Project will be subject to rigorous safety controls by relevant authorities and institutions, guaranteeing that the design adheres to national and international safety standards.

According to the Feasibility Study, the estimated land requirement is approx. 15 ha for the PTES, 7.4 ha for the solar thermal plant, and around 0.45 ha for the technical building. The land is currently being leased to tenants until the area is developed for its intended purpose. Since all plots are state-owned, the leased land is voluntarily rented, and the lessee was aware of the land's nature and usage restrictions both before and during the Lease Agreement signing, there will be no need for an expropriation procedure for the Project. In line with ESAP, the Company will notify the Ministry of Agriculture, Forestry, and Water Management about the planned start of construction at the time of tendering, allowing the Ministry to inform the lessees in a timely manner. No informal users have been observed on the entire Project footprint during the site visits.

The Project is located within the proposed Site of Community Importance ("SCI") Novi Sad, which is designated for a priority habitat type (\*91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* - *Alno-Padion*, *Alnion incanae*, *Salicion albae*) and the bat species Kuhl's pipistrelle (*Pipistrellus kuhlii*). Habitat mapping shows that habitat \*91E0 is not present at the Project site, however the presence of Kuhl's pipistrelle cannot be excluded as the species could potentially use the area for foraging. No features supporting sensitive life cycle periods of Kuhl's pipistrelle are present in the Project area. The species is present in a wide variety of habitat types and is a highly adaptable species known to inhabit urban and suburban areas of Novi Sad. The size of the Project site in relation to the wide area within and around the City of Novi Sad available for foraging is negligible. The Project does not have the potential for negative impacts to biodiversity values. ESDD has indicated that impacts on the pSCI is likely to be negligible, however the ESAP will require an Appropriate Assessment screening to confirm this.

There are no cultural heritage sites in the Project area. A chance find procedure is stipulated by ESAP for management of any unknown cultural and archaeological assets.

The Stakeholder Engagement Plan ("SEP") has been prepared for the Project and includes a grievance mechanism to address complaints of external stakeholders, in line with the ESAP. Both SEP and Non-Technical Summary will be publicly disclosed in English and local language. The Bank will monitor the implementation of the Project through review of annual monitoring reports and visits as required. PIU Support and Supervision Consultant will be appointed and funded under the Project which will include support on ESAP implementation.

## 6.2 INTEGRITY

In conjunction with OCCO, integrity due diligence was undertaken on the Borrower, the Company, its shareholders, senior management, and other relevant parties. [REDACTED].

All actions required by applicable EBRD procedures relevant to the prevention of money laundering, terrorist financing, and other integrity issues have been taken with respect to the Project, and the Project files contain the integrity checklists and other required documentation which have been properly and accurately completed to proceed with the Project.

## 6.3 OTHER ISSUES

**Concessional Finance** - The Project is expected to be supported with an up to EUR 20.9 million investment grant from the EU through WBIF, which reflects a concessionality level of up to 20 per cent. The investment grant makes the Project financially viable by helping to reduce the development costs of the Project and ensuring keeping DH services at an affordable level for end customers. The grant also enhances the Project's economics while enabling unpriced external benefits (enhanced energy resilience and independence, contribution to the EU green agenda, etc.). The Project is considered a pioneering project in the region and is expected to catalyse further investments with its new concept in the DH sector.

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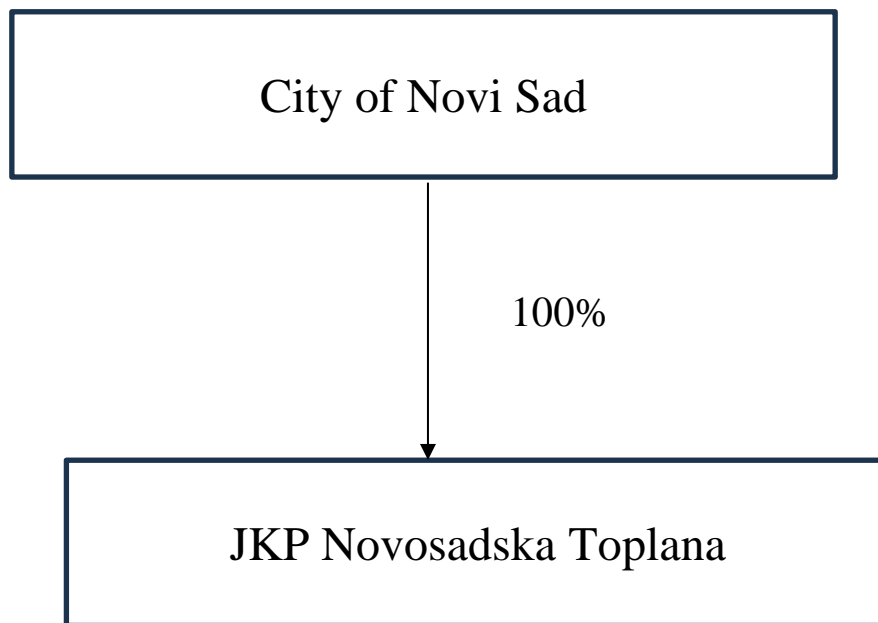
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**ANNEXES TO OPERATION REPORT**

ANNEX 1	Shareholding Structure
ANNEX 2	Project Description
ANNEX 3	Macroeconomic and Debt Assessment
ANNEX 4	Green Assessments
ANNEX 5	Project Implementation

## ANNEX 1 – SHAREHOLDING STRUCTURE



## ANNEX 2 – PROJECT DESCRIPTION

The Project will enable the development and construction of solar-thermal and heat pump-generated renewable energy and its integration into the Novi Sad DH system. This will also lead to a better sector coupling between district energy and electricity balancing by the implementation of seasonal heat energy storage technologies.

The strategic goal of the City and Novi Sad DHC is to provide a base heat energy source for the needs of the DH system by integrating RES into the existing DH infrastructure. Currently, the heat energy production system of the City's DH system is based exclusively on the use of natural gas as the primary energy source.

The City of Novi Sad and Novi Sad DHC recognized solar-thermal technology as a sustainable solution for its DH system and are keen to progress towards a sustainable transformation into a 4DH by integrating the solar-thermal base heat source. Solar-thermal technology involves collecting solar energy during the summer through solar collector fields, seasonal energy storage, and using heat for district heating through heat pumps. This technology is experiencing great expansion in Europe due to its positive environmental, energy, economic, and political effects.

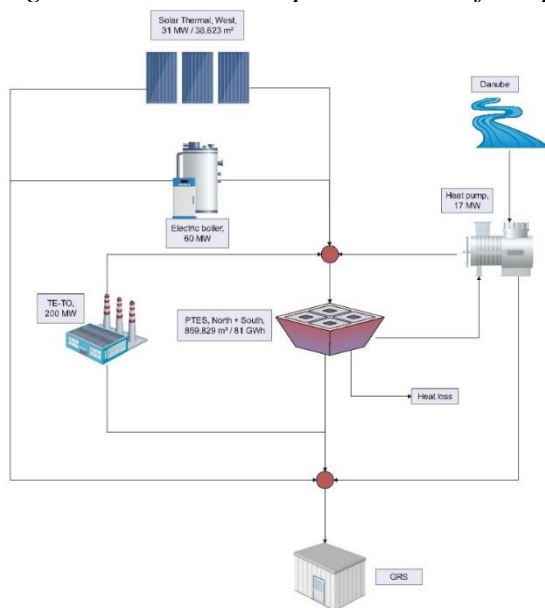
The solar-thermal plant is scheduled to be situated in the immediate vicinity of the City's DH system and the CHP Novi Sad. Specifically, the solar collector fields are planned for the zone designated for the City's sanitary water protection. Currently, this area is not utilised for the City's water supply, yet there is a plan to include it as an additional source in the future (depicted by the blue marked zone in the left part of **Error! Reference source not found.** below). This strategic placement aims at utilizing the space above the water source for efficient solar energy collection. The figure on the left illustrates the land, with a blue zone designated for collectors, a yellow zone for storage, and a red zone indicating the CHP power plant TE-TO "Novi Sad." The optimal scenario involves the construction of a solar-thermal plant with around 38,600 m<sup>2</sup> (31 MW) of solar collector fields, seasonal storage with a volume of 870,000 m<sup>3</sup>, a heat pump with a capacity of 17 MW, and an eBoiler of 60 MW.

*Figure 1: Location of the Project*



By leveraging the existing hot water infrastructure of the district heating system, situated adjacent to the planned plant, about 29,000 MWh of clean renewable solar energy will be produced within the City's DH system, almost 40,000MWh of excessive electricity RES production converted to heat by eBoiler and 50,000MWh of heat produced by the heat pump by cooling water form river Danube. This heat will be used to work integrally with the existing CHP Novi Sad.

Figure 2: Schematic representation of the planned plant operation



The construction of this Project will enable the City of Novi Sad to permanently fulfil almost 20 per cent of its heating needs through the solar-thermal plant.

An additional benefit of thermal storage in the case of electrification of the thermal energy source is the possibility for TSO to increase the limit for RES integration in the electric power system. Electrified thermal storages can provide an additional balance reserve to the system and enable a significant penetration of RES into the Serbian electric power system. In addition to the balancing reserve coupling of the district heating system and the electric power system, it has other advantages:

- As a demand response, it can become a new resource of the system operator for removing congestion in the network;
- The electricity market has a positive effect because it can take over excess electricity from the network and prevent the curtailment of electricity from RES.

The Project will support Serbia's efforts to increase the participation of renewable energy sources in the total production of heat, by providing additional green energy, while supporting the sustainable development of the local community in the City of Novi Sad. [REDACTED].

The overall investment will be implemented on a "turnkey" basis according to the Yellow FIDIC contracting system. This means that as part of the implementation of the work, a project for a building permit will be created and all works will be carried out.

The Project will have a positive impact on the entire population that is supplied with heat energy from the district heating system - about 280,000 inhabitants of Novi Sad. Introducing solar heat to replace natural gas in the fuel mix will significantly enhance the safety and reliability of the heat supply. This transition also mitigates the risk of rising heat tariffs resulting from the expected increase in natural gas prices, which is particularly crucial for socially vulnerable and economically disadvantaged populations connected to the DH system.

By integrating RES, the Project will ensure more inclusive access to affordable, clean, and reliable energy for all DH consumers, including those who are vulnerable or disadvantaged. This shift

improves air quality and reduces health risks for people with respiratory conditions, the elderly, and children, who are more susceptible to pollution-related illnesses. Additionally, the lower operational costs of renewables help decrease energy bills, easing the financial burden on low-income households and those facing energy poverty.

Ultimately, the scope of the Project is both local and national as Novi Sad citizens will be the direct beneficiaries of the benefits enabled by the Project but it will also serve as a pioneering Project of renewable district energy and RES introduction in Serbia paving the way for the DH sector decarbonisation in the country.

The PTES installation complies with the EU Recommendations on Energy Storage (Commission Recommendation of 14 March 2023 on Energy Storage - 2023/C 103/01), representing a crucial technology to provide the necessary flexibility, stability, and reliability for the energy system of the future. The development and deployment of energy storage represent a key technology crucial for supporting the decarbonisation goals set in the European Green Deal and the actions outlined in the REPowerEU Plan (which is focused on reducing Europe's reliance on fossil fuels). The PTES installation aligns with the Clean Energy for All Europeans package, adopted in 2019, aimed at decarbonising the EU's energy system by transitioning away from fossil fuels toward cleaner energy sources, consistent with the objectives of the European Green Deal. Additionally, it supports the EU Solar Energy Strategy by promoting heat generation from solar thermal sources and prioritising the utilisation of energy storage.

The Project aligns with the Energy Community Treaty commitments aimed at decarbonising the energy sector, enhancing the share of renewable energy in heating and cooling production and distribution, and ensuring supply security.

## ANNEX 3 – MACROECONOMIC AND DEBT ASSESSMENT

### Macroeconomic developments and policy response

**Economic activity is accelerating.** After moderate growth of 2.6 per cent, in 2022 and acceleration to 3.8 per cent (according to newly revised data on GDP), growth picked up further to 4.3 per cent in the first half of 2024 according to the flash estimate. The highest contribution came from services, predominantly retail trade, catering and tourism, and construction. On the expenditure side growth was driven by domestic demand, namely household consumption and fixed investment, with a negative contribution of net exports due to higher growth in imports of services, particularly tourism and transport, in line with easing inflation and domestic demand recovery. Higher growth in imports, along with a decrease in remittance inflows and state donations in the first seven months reflected in the current account deficit of close to EUR 2 billion, 3 times higher compared to the first seven months of last year. The net FDI inflow remained strong at EUR 2.8 billion in the first seven months of 2024.

**Inflationary pressures are easing, although more slowly than in peer countries.** Average inflation went from 12 per cent in 2022 to 12.4 per cent in 2023 and declined to 4.9 per cent in the first eight months of 2024. The authorities employed monetary and fiscal policy measures to support the economy in light of still high inflation. Monetary policy remains tight with the policy rate slightly reduced from the peak of 6.5 per cent to 5.75 per cent in September 2024. A new set of measures announced for the second half of 2024, on the other hand, are easing the fiscal stance by increasing pensions, minimal wages and average public sector wages. Despite the expansionary policy, the fiscal deficit is to remain at the same level as in 2023 (at 2.2 per cent of GDP), and the IMF assessed the public debt as sustainable. In addition to the fiscal reforms, new draft legislation is in the process of public consultation to allow NBS to put an upper limit on interest rates on housing, consumer, and cash loans, to help boost lending activity which has been weak in 2024.

**Growth is set to pick up in the near term.** Economic growth is to rise nearer its medium-term potential at 3.8 per cent in 2024, and further to 4 per cent in 2025 in line with expected global recovery. However, given the recent revision of GDP due to changed methodology, it is yet unclear how will the growth forecast be affected. The downside risk arises from a speed of growth of the EU as a major trading partner, tight labor markets, geopolitical instability affecting supply chains and adverse weather conditions that may harm agricultural production. On the other hand, successful implementation of reforms in the area of governance of state-owned enterprises and well-planned and executed capital investment may boost growth further. The medium-term outlook remains robust, underpinned by macroeconomic stability, and a record of strong public and foreign investments.

### Debt sustainability

Public debt remained above the maximum level (45 per cent of GDP) set by the fiscal rule prior to the pandemic, despite a significant fall since 2015. In response to the pandemic-induced shock, the government implemented large aid packages in 2020-21 to cushion the impact and support recovery, increasing the budget deficit significantly. Public debt increased from 52.8 per cent of GDP in 2019 to 57.8 per cent of GDP in 2020 before declining to 52.3 per cent of GDP by the end of 2023. Due to higher forecasted GDP in 2024, the public debt to GDP ratio decreased further to 50 per cent in H1 2024.

Public debt is set to gradually decline to 43.8 per cent of GDP in 2028, conditional on the implementation of feasible fiscal adjustment measures, including those part of the SBA, according to

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the IMF. The main vulnerability to public debt sustainability stems from the large proportion of foreign currency debt, though this is mitigated by the long average maturity of outstanding debt, the high share of fixed interest rate debt, and multilateral and institutional creditors in external debt. The risk assessment from the July 2024 IMF Staff Report assesses the likelihood and impact of sovereign debt distress as the medium, mitigated by the record high reserves, a steady base of external official and domestic creditors, and manageable fiscal deficits.

Serbia has just received an investment rating (BBB-, with stable outlook) by S&P, upgraded from BB+ in October 2024, due to macro fiscal stability, strong growth prospect and sound external buffers. When it comes to other agencies, the rating is Ba2 (Positive) by Moody's, upgraded from Stable in September 2024 and BB+ (Positive) by Fitch, upgraded from Stable in August 2024.

## ANNEX 4 – GREEN ASSESSMENTS

### SUMMARY

- The Project is development, construction, and integration of a solar-thermal and heat pump system within the existing district heating network in the City of Novi Sad. The solar thermal heat plant, heat pumps and other electric heating systems will displace an important share of fossil-based generation in the network.
- The Project is determined **aligned with both mitigation and adaptation goals of the Paris Agreement**.
- The Project is attributed **100% GET**.
- [REDACTED]. The Project is eligible for EBRD Green Cities as it reduces local pollution from the relevant activity by at least 20 per cent.

### PARIS ALIGNMENT ASSESSMENT

#### *Alignment with the mitigation goals of Paris Agreement - General screening*

The project is determined as aligned with the mitigation goals of the Paris Agreement based on the application of the Bank's Paris alignment approach for direct finance.

- The project activity is included in the 'MDBs' aligned list' under the category of Energy as it falls under "District heating or cooling systems with negligible lifecycle GHG emissions – using significant renewable energy".
- There are no activities included in the 'non-aligned list'.

#### *Alignment with the adaptation goals of Paris Agreement*

The project is determined as aligned with the adaptation goals of the Paris Agreement as it satisfies all three steps of the assessment. All material physical climate risks have been addressed.

### GET ATTRIBUTION

The Project is attributed 100% GET. This share has been calculated in line with GET Handbook Annex 3 – 'Category 3. Pollution prevention and control'. The Project is identified as an eligible activity for "Air pollution management" as it significantly improves ambient air quality.

The Project integrated with the existing CHP plant, will supply 99% of the annual heat demand for the district heating grid connected to the 3 of the 6 heating plants in the DH network. This will be accomplished by incorporating new renewable energy sources and ensuring the flexible operation of the existing CHP plant alongside the new pit thermal energy storage system. The new system will displace heat generation by natural gas boilers and will significantly reduce reliance on fossil fuels. The Project has a net increase in GHG emissions as Scope 2 emissions will increase with increased electricity consumption due to the electricity consumption by electric boilers and heat pumps. The new system will significantly reduce air pollutant (NO<sub>x</sub>, SO<sub>2</sub>, PM) emissions and thus qualifies as 100% GET (environment).

The Project consists of various components in the district heating network including: 1) solar thermal collectors, 2) pit thermal storage system, 3) heat pumps and 4) electric boilers.

The solar thermal system coupled with the storage system, directly contributes to GHG emission reduction by replacing fossil-fuel based energy (heat) generation (resulting in a net Scope 1 emission reduction). While the other components of the Project also support decarbonisation of the DH system, their immediate link to emission reduction is less direct. This is primarily due to the electricity consumption required for the operation of heat pumps and e-boilers. Currently, Serbia's electricity grid is predominantly fossil fuel-based, with approximately 70% of electricity generation coming from these sources. As a result, the electricity used by these new components leads to an increase in emissions (Scope 2 emission increase).

Overall, given the current energy mix, the project results in higher emissions. However, this may change in a positive way in the future. Serbia, through its Integrated National Energy and Climate Action Plan (NECP), has committed to a 40.3% reduction in emissions and aims to achieve a 50.9% share of renewable energy sources in heating and cooling (the Project directly contributes to this target) and a 49.1% share of renewable energy in electricity production by 2030. As renewable energy sources increase in the grid mix, the potential for carbon intensity reductions will grow over time.

The Bank has evaluated both scenarios during due diligence (today's grid emissions vs. modelled grid emissions in line with the NECP) and is reporting the project's emissions under conservative assumptions, following EBRD guidelines and using UNFCCC grid emission factors.

It is also worth noting that the heat pump and e-boilers are specifically designed to run during times when power prices are low or negative. This is typically when there is an abundance of intermittent renewable energy flowing into the Serbian grid, meaning that actual Scope 2 emissions are likely to be lower than those estimated using the UNFCCC static emissions factor would suggest, though this cannot be easily measured. Hence, the project is only claiming mitigation GET for the components that can align with the Bank's current GET mitigation methodology (i.e., the solar thermal collectors, heat pumps, e-boilers, and associated infrastructure), resulting in 53.35% mitigation GET. The primary basis of the 100% GET in this project is reduction in air pollutants.

The Project components are also in line with Annex 2 - GET mitigation under the following categories:

- Solar thermal field under "2.1 Generation of renewable energy with low lifecycle GHG emissions to supply electricity, heating, mechanical energy or cooling",
- Electric boilers and installation of heat pumps as eligible activities under '9.1 Measures that reduce net energy consumption, resource consumption or CO<sub>2</sub>e emissions, or increase plant-based carbon sinks in greenfield and brownfield buildings and associated grounds'. As per relevant criteria under the category, the client commits to adopting measures that are reducing net energy consumption, and also CO<sub>2</sub>e emissions in the network via the Project. While the solar thermal investment reduces CO<sub>2</sub>e emissions, the boilers and the solar thermal component also replace inefficient and highly polluting existing boiler rooms and individual furnaces for heating. Theoretical efficiency of e-boilers is close to 100% while that of gas boilers ranges between 75-95%,
- The construction of technical building as well as other technical installations such as pipes, valves and pumps for DH act as associated infrastructure that is vital part of the full project and therefore fall under above categories.

The project is inherently designed to facilitate greater uptake of electricity at times when the renewable energy production in the wider Serbian grid is higher via the heat pump and seasonal storage installations, thus supporting emissions reductions. The Project therefore qualifies as 53.4% GET (mitigation)<sup>3</sup>.

The expected impacts of the transaction are:

- Renewable energy capacity installed of 31 MW and renewable energy heat produced of 104,643 GJ/year;
- Air pollutant emission reduction of 39 tNO<sub>x</sub>/year, 1 tPM/year, 0.11 tSO<sub>2</sub>/year.

[REDACTED]

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<sup>3</sup> While the PTES system is assessed under '2.8 Energy storage or measures to improve network stability or flexibility that increase consumption of very-low-carbon energy', given that it is linked to both the solar thermal component of the Project and the CHP unit in the network, a GET share is not sought for this component.

## ANNEX 5 – PROJECT IMPLEMENTATION

### Procurement classification – *Public sovereign*

[REDACTED]. The Executing Agency for the Project will be Novi Sad District Heating Company who will set up a dedicated PIU. The PIU will be in charge of procurement, contract administration, disbursements and reporting to the Project's shareholders. However, the Client has no experience with implementation of similar projects in terms of IFI's procurement and administrative arrangements. To mitigate the risk, a PIU Support and Supervision Consultant will be appointed and funded under the Project.

### **Contracts risk assessment:** *Moderate –high*

There are two contracts to be financed under the Project namely: a) the PIU Support and Supervision Consultant and b) Design and Build of Solar Thermal and Heat Pump Generated Renewable Energy Integration District Heating System.

Due to the low value and complexity of the contracts in the District Heating Sector in Serbia, historically the foreign companies have not participated in the public tenders in this sector. PIU Support consultant will be required to prepare comprehensive market analysis and promotional campaign to address the risk of potentially low international competition.

Additionally, the procurement method to be used for the award of the works contract will envisage a prequalification process which will test the market interest and capacity to implement the contract as well as the level of competitiveness.

Subject to the outcome of the market research and prequalification process the procurement method used for the award of the contract may be adjusted to address the risks associated with the implementation of the Project.

### **Procurement arrangements:**

The Project is classified as a public sector operation for procurement purposes.

All contracts financed from the EBRD loan proceeds, as presented in the attached indicative Procurement Plan, will be procured through open competitive procedures in accordance with Article 3, Section III of EBRD PPR and relevant EBRD Standard Procurement Documents.

The Works contract will be procured through Open Multiple Stages tendering procedure with Prequalification. The contract that will be based on FIDIC Yellow Book General Conditions of Contracts.

The PIU Support Consultant and Works Supervision Services will be procured through 'Open' Single Stage Two Envelopes tendering procedure.

All contracts will be subject to the Bank's prior review. [REDACTED].