Technical Assistance to Connectivity in the Western Balkans - 2
NEAR/2022/EA-RP/0081

SERBIA

Development of the project for the reconstruction of the Electric Traction Substation (ETS) Nis and the connecting transmission line from ETS Nis to the railway line

The subject sub-project is still ongoing. The description that follows is for information purposes only and subject to the sub-project's completion.

Partners:
- European Investment Bank (EIB)
- Serbian Railways Infrastructure
- Ministry of European Integration
- Ministry of Construction, Transport and Infrastructure

Budget of Technical Assistance:
- Euro 285,000

EU contribution[1]:
- As above (100%)

Technical Assistance provided by:
- CONNECTA 2 (Technical Assistance to Connectivity in the Western Balkans - 2)

Transport

The ETS Niš Project is a key infrastructure initiative supporting the electrification and modernization of the Niš - Dimitrovgrad - Bulgarian border railway line, part of Corridor X - a strategic route of the Western Balkans - Eastern Mediterranean European Corridor. As the only non-electrified section of Corridor X in Serbia, its upgrade is crucial for continuous electric traction and efficient regional connectivity.

Listed as a flagship under the EU's Economic and Investment Plan for the Western Balkans (2021–2027), the project aligns with Serbia's national strategies for sustainable transport and decarbonisation. The new Electric Traction Substation (ETS) Niš and associated transmission line will enhance power supply reliability and operational safety at the Niš railway junction, a key node for domestic and cross-border services.

The current ETS Niš facility is outdated and undersized. Technical assessments highlight the need for a complete redesign to meet future demands and integrate with upgraded signaling and electrification systems. The new substation will include SCADA-based remote control, optical communication redundancy, and sufficient capacity for existing and future rail lines.

Advanced environmental and climate adaptation elements are integrated in the design, including improved energy efficiency, resilient infrastructure for extreme weather, and urban-compatible construction methods. This approach reflects EU Green Deal principles.

The project will eliminate a bottleneck for electrified rail transport, reduce diesel reliance, and facilitate a shift toward low-emission mobility. Benefits will include reduced emissions, lower maintenance costs, and improved frequency and punctuality for rail services.

The **objective of CONNECTA 2's technical assistance** is to provide comprehensive documentation needed for development of the ETS Niš project.

The assistance also ensures high standards in safety, quality, and compatibility with Serbia's future rail electrification. Given that construction of the Niš Bypass is already underway, this support must be delivered promptly to avoid delays.

Results to be achieved:

- Additional urban plan, for inclusion of the ETS to the existing spatial plan
- Conceptual design for issuing location conditions
- Preliminary design, including BoQ
- Design for construction permit

[1]EU contribution concerns only Technical Assistance services for project development

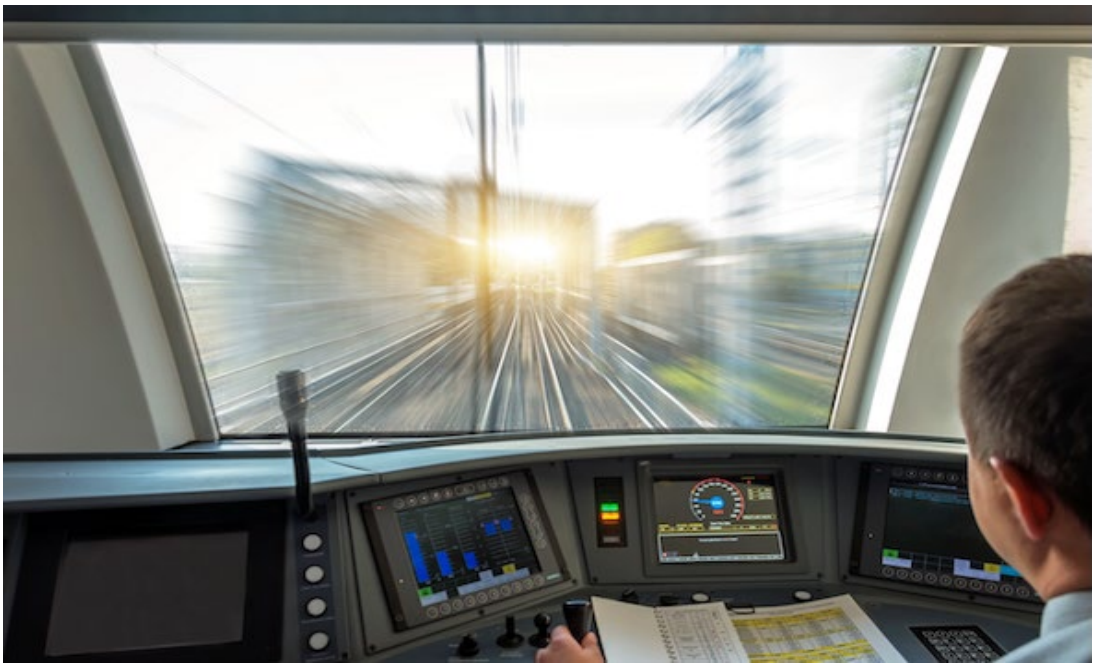
Start date: April, 2025

Duration: 18 months

Key recommendations–further actions:

(to be updated after the sub-project is completed)

Transport



Benefits expected due to Technical Assistance:

- **Infrastructure Modernisation**: Secure reliable electrification infrastructure for a critical transport corridor; Increase energy efficiency and network performance; reduce maintenance and operational disruptions.
- **Operational and Planning Clarity:** Identify and document exact scope of needed works and investments; enable alignment with WBIF investment implementation phases.
- **Capacity and Safety Enhancements:** Enhanced safety through new relay, control, and protection systems; improved monitoring, diagnostics, and remote control.
- **Sustainability and Resilience:** Support electrification of Serbia's only non-electrified Corridor X section; align with EU Green Deal and smart mobility goals; strengthen climate resilience through modern infrastructure standards.

Impacts anticipated:

- **Infrastructure Improvements and Optimisation:**
  - Improved power distribution at a key junction;
  - fewer bottlenecks from outdated infrastructure; and
  - more reliable regional and international rail services.
- **Energy Efficiency and Environmental Benefits:**
  - Less diesel use and lower emissions;
  - better energy transmission through new 25 kV systems; and
  - lower maintenance and operational costs.
- **Regulatory and Strategic Alignment:**
  - Compliance with EU and national transport standards;
  - alignment with the EU Green Deal and mobility strategy; and
  - increased eligibility for future funding.
- **Sustainability and Resilience:**
  - Infrastructure built for extreme weather conditions;
  - SCADA and protection systems boost system stability; and
  - supports modal shift to rail and long-term resilience.