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

REGIONAL

Increase in cross-border transmission capacities between Serbia and Montenegro

Partners:
- Electric Network of Serbia (Elektromreža Srbije - EMS)
- Montenegrin Electric Transmission System (Crnogorski elektroprenosni system - CGES)

Budget of Technical Assistance:
- Euro 350,000

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

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

Energy

The high-voltage transmission line OHL 220 kV 206/2 SS Mojkovac - SS Pljevlja 2 is an internal line of the Montenegrin transmission system where a part of the line passes over the territory of Serbia. The line consists of several sections, namely: exit Mojkovac (MNE), Mojkovac - Bijelo Polje (MNE), Bijelo Polje - Velika Župa (SRB) and Velika Župa - Pljevlja (MNE). Currently the ownership of the line is mixed between CGES and EMS, which is inadequate for proper maintenance and further development of sustainable capacities.

Aiming to ensure high-quality connections,increase the cross-border transmission and strengthen the energy paths to the wider regional and European market, the CGES and EMS are exploring the optimal technical solution for splitting the line Mojkovac - Pljevlja 2 on the territory of Serbia.

By building/upgrading the necessary transmission infrastructure - including a new substation or a new switchyard, two new interconnecting transmission lines between Montenegro and Serbia could be formed. In addition to resolving the property-legal relations in accordance with European practice and advancing the networks' performance, it is expected that the application of the proposed technical solution will further increase the flexibility and capacity of the transmission systems of the two countries - in particular in the process of integration of solar and wind power plants.

The **overall objective** of the CONNECTA 2 assignment was to undertake a Pre-feasibility study and initial environmental and social examination for the proposed variants of splitting the Mojkovac - Pljevlja 2 transmission line on the territory of Serbia.

The **specific objective** of CONNECTA2's technical assistance was to:
- Analyze variants of the perspective model of the transmission system for the year 2030, taking into account the existence of Section IV of the Trans-Balkan Corridor for the transmission of electricity, as well as the 110 kV transmission line SS Prijepolje - SS Tutin.
- Modelling of generation scenarios and high-quality options covering cases that involve the construction of either a switchyard or a substation, as well as variations in voltage levels.
- Examine the development of investment projects along the Trans-Balkan Corridor and explore opportunities to enhance cross-border capacity.
- Explore simpler solutions to enhance capacity by incorporating high-temperature low sag (HTLS) conductors.
- A maximum four variants to be analyzed.

Results achieved by the TA:

- A set of four distinct, high-quality transmission system development variants for the year 2030;
- Development of realistic and technically viable scenarios;
- An assessment report outlining ongoing and planned investment projects along the corridor, impact on system reliability and regional connectivity and potential for enhanced cross-border electricity exchange;
- Critical assessment and comparison of the four chosen variants with a clear recommendation of the optimal variant.

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

Start date: September, 2025

End date: August, 2026

Key recommendations – further actions:

- Splitting the line and directly introducing the two sections into SS Bistrica, resulting in a 220 kV OHL between SS Pljevlja 2 and SS Bistrica and a 220 kV OHL between SS Bistrica and SS Mojkovac. This is the preferred development option.

Benefits expected due to Technical Assistance:

Building the necessary transmission infrastructure and forming two new interconnecting transmission lines between Serbia and Montenegro.

- **Transmission infrastructure planning**
  Identification of the optimal location for a new switchyard (SWY) or substation to enhance the power grid's capacity and reliability.

- **Policy / regulatory recommendations**
  Necessary steps for resolving property-legal issues to be defined and agreed among EMS and CGES.

- **Initial environmental and social assessment**
  Definition of the baseline situation, including the identification of environmental and social constraints and key hotspots.

Impacts anticipated:

- **Increased energy security**:
  - Improved stability and reliability;
  - Enhanced ability to handle emergencies and/or unexpected demand surges.

- **Facilitation of renewable energy integration**:
  - Enabling better integration of RES;
  - Reducing curtailment of renewable energy.

- **Reduction of transmission losses**:
  - Decreasing energy transmission losses by upgrading the infrastructure.

- **Policy / regulatory recommendations**
  - Inventory of assets;
  - Legal ownership verification;
  - Easement or Right-of-Way agreements;
  - Infrastructure maintenance responsibilities;
  - Regulatory compliance;
  - Promoting cross-border energy trade and collaboration.

- **Environmental benefits:**
  - Reducing dependency on fossil fuels;
  - Supporting the transition to low-carbon energy systems.

Energy