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

BOSNIA & HERZEGOVINA

Feasibility Study and Strategic Environmental and Social Assessment on the development of the transmission network for the Bosnia and Herzegovina nation-wide grid and interconnections with neighbouring countries for the purpose of integration of planned RES

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:

- Ministry of Foreign Trade and Economic Relations
- State Regulatory Commission (SERC)
- Electricity Transmission Company (Elektroprenos BiH)
- Independent System Operator (NOSBiH)
- Federal Ministry of Energy, Mining and Industry
- Federal Ministry of Environment and Tourism
- Ministry of Energy and Mining of the Republic of Srpska
- Ministry of Spatial Planning, Construction and Ecology of the Republic of Srpska
- Elektroprivreda BiH (EPBiH)
- Elektroprivreda Republike Srpske (ERS)
- Elektroprivreda Hrvatske zajednice Herceg Bosne (EPHZHB)
- European Bank for Reconstruction and Development (EBRD)

Budget of Technical Assistance:

- Euro 860,000

EU contribution[1]:

- As above (100%)

Energy

Bosnia and Herzegovina (BiH) produces almost 55% of its electricity in coal-fired power plants. To meet the goals of the National Energy and Climate Plan (NECP) the country is making efforts to exploit renewable resources and integrate production capacities based on these resources into the transmission networks. The NECP aligns with EU objectives relating to the production of electricity from renewable energy sources (RES) and the phasing out of coal as the primary fuel for electricity production.

The southern, western and southeastern regions of Bosnia and Herzegovina are especially rich in renewable energy resources (wind and sun). These regions are sparsely populated, with relatively small local consumption. Additionally, there are significant mining areas where coal extraction has been completed. As part of the just energy transition, it is planned to introduce new power plants based on renewable sources in these areas, primarily photovoltaic power plants and reversible hydroelectric plants.

The BiH electricity transmission system already has many requests for new RES (wind, hydro, and photovoltaic) connections (approximately 7,000 MW). The transmission network in areas abundant with renewable resources is insufficient to accommodate requests for power evacuation. By investing in development of the transmission infrastructure and safe and reliable integration of RES-based production capacities, BiH will facilitate its energy sector transition - crucial for the green and sustainable future.

The **objective of CONNECTA 2's technical assistance** is to:

- Assess the status and capacities of the High Voltage transmission network in Bosnia and Herzegovina and identify upgrades of existing and construction of new infrastructure that is required to connect planned renewable generation capacity as part of the country's power system decarbonisation plan.
- Evaluate the relative differences in environmental and social constraints and impacts between the options, as well as to allow adequate project planning considering EBRD's mitigation hierarchy (Environmental & Social Policy, 2024).
- Consider 'traditional' network investments in lines, substations, etc., as well as more novel solutions based on energy storage and smart applications.
- Evaluate optimal cost upgrade /construction ratio for reconstruction and reconfiguration of the existing 110 kV network, the construction of a new 110 kV network, and the construction of a new 400 kV network, with special emphasis on in the southeastern and southwestern regions of BiH for the integration of RES-based production capacities.

Results to be achieved:

- Methodology for option analysis;
- Smart grid study on the implementation of dynamic line rating;
- Feasibility study;
- Strategic environmental and social assessment;
- Stakeholder engagement plan.

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

Technical Assistance provided by:

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

Start date: April, 2025

Duration: 12 months

Key recommendations – further actions:

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

Energy

Benefits expected due to Technical Assistance:

- **Assessment of bottlenecks**:
  Identify areas where existing capacity is insufficient to meet current demand, projected demand, and anticipated increases due to new renewable energy generation.

- **Transmission infrastructure planning**:
  Determine transmission corridors requiring upgrades or expansions to enhance the power grid's capacity and reliability.

- **Energy storage deployment**:
  Identify potential sites for energy storage facilities, including battery systems and pumped storage solutions, to support grid stability and resource balancing.

- **Policy / regulatory recommendations**:
  Propose reforms and policies to encourage investments in transmission infrastructure, balancing resources, and energy storage solutions.

  Recommendations for application procedures for environmental permits.

- **Strategic environmental and social assessment**:
  Analyse the environmental and social baseline and identify environmental and social constraints and hot spots for all considered options and develop a precise method for comparing each option against environmental and social constraints/hot spots.

Impacts anticipated:

- **Integration of RES**:
  - Grid expansion;
  - Grid stability; and
  - Reduction in curtailment.

- **Regional energy market integration**:
  - Cross-border energy trade; and
  - Harmonized energy policies.

- **Economic growth:**
  - Investment attraction; and
  - Job creation.

- **Environmental benefits**:
  - Emission reductions; and
  - Biodiversity protection.

- **Social benefits:**
  - Improved energy access;
  - Public health improvements; and
  - Community involvement.

- **Alignment with national and international goals**:
  - EU energy transition goals; and
  - National energy security.

- **Risk mitigation**:
  - Climate resilience; and
  - Policy alignment.