



# Technical Assistance to Connectivity in the Western Balkans

## EuropeAid/13785/IH/SER/MULTI

### BOSNIA AND HERZEGOVINA

## Financial Viability Analysis and Cost Benefit Analysis for the interconnection Pipeline BiH – HR (Zagvozd – Posušje – Novi Travnik with a branch to Mostar)

#### Partners:

- BH-Gas Ltd
- Ministry of Foreign Trade and Economic Relations
- Federal Ministry of Energy, Mining and Industry
- Plinacro Ltd, Zagreb
- European Bank for Reconstruction and Development (EBRD)

#### Budget of Technical Assistance:

- Euro141,000

#### EU contribution<sup>1</sup>:

- As above(100%)

#### Technical Assistance provided by:

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

The Western Balkan countries have made the Connectivity Agenda one of their highest priorities, with a special emphasis on the preparation and financing of concrete regional infrastructure investment projects in the transport and energy sectors. This is coupled with the implementation of respective technical standards and reform measures.

In particular, for the gas sector, the European Union has provided grants to prepare gas master plans, to support gas power initiatives and to prepare prefeasibility, feasibility studies, Cost Benefit Analysis (CBA) and preliminary designs for gas pipelines adding to energy security in the Western Balkans.

This project is part of the Connectivity Agenda of the European Union and is aimed at closing a gap in the gas transport networks in the Western Balkans.

The existing gas transmission system of Bosnia & Herzegovina (BiH) has a total length of 243 km, with the main high pressure gas transmission pipeline running from Zvornik to Sarajevo having a length of 133 km. Ownership of the gas network is split among three companies: BH-Gas, Srbijagas and Sarajevo-gas Lukavica.

BiH currently has only one supply route, which is near the end of its technical lifetime. This pipeline has a maximum of 10 years of remaining technical lifetime. Current handover pressure is 30 bar. Due to the technical lifetime and inadequate maintenance of the gas pipeline of another gas Transmission System Operator (TSO), the pressure cannot be increased to the design level (50 bar).

Having a single point of entry of gas supplies to BiH poses a significant risk of disruption of gas supply on gas transmissionsystems in Serbia and Hungary for any reason or interruption of gas supply via Ukraine. As a result, there is a need for an alternative source of supply from Croatia (HR). Further, the capacity of the existing transmission route is insufficient to meet the existing demand of both entities and especially for future natural gas market enhancement.

The CBA included all necessary sections in both Bosnia & Herzegovina and Croatia, with the aim of verifying the financial and the socio-economic feasibility of the South Gas Interconnector of BiH and HR, from Zagvozd to Posušje and Novi Travnik with a branch to Mostar (hereinafter the “South Gas Interconnector”).



Gas Transmission Network in BiH

Energy

<sup>1</sup>EU contribution concerns only Technical Assistance services for project development.

Key recommendations - further actions:

- Prepare preliminary / detailed design for the pipeline section in BiH;
- Prepare full Environmental and Social Impact Assessment (ESIA);
- Prepare Tender Dossier for the pipeline section in BiH;
- Conduct international tender for Works and Supervision.

Results achieved by the TA and Key Conclusions:

The financial analysis separately examined the pipeline branch located in BiH and the section located in HR as well as the option with or without the Ionian-Adriatic Pipeline (IAP).

The Financial Internal Rate of Return (FIRR) represents the commercial viability of a project being its ability to generate revenues remunerating its investment and operational costs.

The Financial Net Present Value (FNPV) is defined as the sum that results when the expected, discounted investment and operating costs of a project are deducted from the discounted values of the expected revenues.

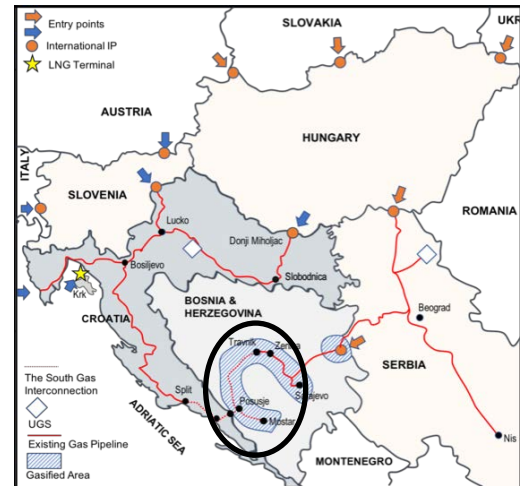
The Financial Benefit/Cost (FB/C) is the ratio between the discounted revenues and discounted costs. If FB/C exceeds 1, the project is efficient considering that the revenues outweigh costs examined on the time horizon.

- The Financial Analysis revealed that all financial indicators for the section in BiH are positive and above the thresholds, indicating the financial viability of this section.

Scenario	Country	FNPV mEUR	FIRR	FB/C ratio
Without IAP	HR	-9.8	3.7%	0.81
	BiH	37.5	7.5%	1.08
With IAP	HR	31.3	20.7%	2.48
	BiH	37.5	7.5%	1.08

- The Economic Analysis revealed that the project is economically sound, as implied by the relevant economic performance indicators.

Scenario	Country	ENPV mEUR	EIRR	EB/C ratio
Without IAP	BiH+HR	3.0	33.1%	4.67
With IAP	BiH+HR	3.1	38.9%	4.99



South Gas Interconnector BiH - HR

Benefit expected due to Technical Assistance:

Import Route Diversification (IRD).

IRD is a market indicator on shares of entry capacities. This indicator measures the diversification of paths that gas can flow through to reach a zone.

IRD ranges from 10 000 (worst) to 0 (best). A country with a single entry point would have an IRD of 10 000 and a country with 2 entry points of same capacity would have an IRD of 5 000.

The IRD of BiH is expected to improve substantially, from 10000 today to 5942, when the project is implemented

Anticipated impact:

- Improvement of Security of Supply;
- Improvement of diversity;
- Improvement of gas market development.

