Black Sea Regional Transmission System Planning Project (BSTP) [1]

Energy Technology and Governance Program

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The Black Sea Regional Transmission System Planning Project (BSTP) was established in 2004 by the United States Agency for International Development, the United States Energy
Association and the transmission system operators of the Black Sea region to build institutional capacity to develop and analyze the region’s first common transmission planning model. Members of the project working group represent the transmission system operators (TSO) of Armenia, Bulgaria, Georgia, Moldova, Romania, Ukraine and Turkey.

The Project Memorandum of Understanding (MOU) provides the basis for the project organization and coordination, details the Project methodology, timelines, schedules and deliverables, the rights and responsibilities of the TSOs, the role of Transelectrica as the Technical Coordinator, the role of EKC as regional model integrator and the support provided by USAID and USEA.

The goals and objectives contained in the MOU are to:

- Promote regional cooperation on transmission planning among Black Sea TSOs
- Identify priority investments in transmission systems and interconnections to improve reliability of the regional power system
- Propose possibilities to enhance electric power trade in the Black Sea Region
- Harmonize transmission planning principles, methods and perhaps methodologies
- Create a working group with experts trained in transmission planning issues and well informed about the characteristics of participating power systems
- Develop a common platform (common database, common software and consistent principles) for transmission system analysis among the TSOs in the Black Sea Region
- Provide training in the use of transmission planning software (PSS/E)
- Promote the results of the analysis to a wide audience of policy and regulatory authorities

The BSTP Working Group has had a consistent membership over the life of the project. Since 2004, the BSTP has trained over 200 engineers in advanced transmission system modeling.

The Working Group developed the first detailed national and regional load flow and dynamic models of the high voltage network for the 2010, 2015 and 2020 planning horizons. These models are used to identify bottlenecks to regional trade of electricity, model the impact of the transmission network on energy security initiatives, determine the potential to integrate renewable energy resources and identify network investment requirements. Over the course of the project, the BSTP working group has completed transmission network studies of regional importance for policy and regulatory authorities, international donors and financial institutions, among other stakeholders. These studies have been credited with leveraging several hundred million dollars of transmission network investment.

The Working Group is currently adapting the ENTSO-E methodology to conduct cost benefit analysis to the unique technical, legal and regulatory environment of the Black Sea region. Phase I of the Cost Benefit Analysis (CBA) will evaluate the techno-economic costs and benefits of selected candidate transmission lines - both interconnection transmission projects and internal transmission projects with significant influence on cross-border transfer capabilities.

The objectives of the project are to:
• Develop a Cost Benefit Analysis methodology consistent with ENTSO-E guidelines, weighing costs against standard network-based assessment of technical benefits of candidate projects (based on standard load flow);
• Develop a market based assessment of benefits accrued by CBA candidate projects (based on OPF modeling analysis);
• Include a qualitative assessment of other relevant criteria affected by candidate transmission projects, such as environment and social impacts.

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