



Hydropower Investments for Developing a Stable Regional Energy Market: Bosnia and Herzegovina's Infrastructure Rehabilitation Support Project

BACKGROUND

In 2005, seven countries of South East Europe instituted the Energy Community of South East Europe (ECSEE) in an effort to regionally integrate the energy market and so to address the inefficiencies of isolated national markets. The goal of the ECSEE is to stabilize the balance between energy supply and demand in South East Europe, through economically efficient electricity generation and distribution mechanisms that contribute to sustaining economic development. The ECSEE now includes nine countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Former Yugoslav Republic of Macedonia, Kosovo, Montenegro, Romania, Serbia) and the European Union. With the signing of the Energy Community Treaty, the countries of the ECSEE committed to market-oriented reforms in order to improve overall energy conservation and efficiency and to adapt to European Union practices and standards. A regional energy market offers significant advantages in terms of improving utilization of existing supply and production capacities, as well as optimizing future investments.

Since Bosnia and Herzegovina met the basic entry requirements of the Energy Community Treaty, it was eligible to borrow under the World Bank ECSEE-Adaptable Program Loan (APL) program. The APL program funds priority investments to support a functioning electricity market, and is a flexible mechanism that countries can benefit from when they have met the policy triggers. Of particular importance for Bosnia and Herzegovina were investments to ensure dam safety in several of the country's most important hydropower stations, to reduce adverse environmental impacts in thermal power stations, and to enhance the distribution

network. Bosnia and Herzegovina's Infrastructure Rehabilitation Support Project (ECSEE APL3) was the third APL under the ECSEE APL program (the first and second APLs were awarded to Romania and Albania, respectively).

PROJECT DESCRIPTION

The objective of the Infrastructure Rehabilitation Support Project, which started in 2006, is to improve power system performance through investments in dam safety, as well as to increase the reliability and availability of hydropower.

Project investments support dam safety measures to address and repair leakages at the Rama, Visegrad, Grabovica, Salakovac and Trebinje II hydropower dams; augment spillway capacity at the Bocac dam; and rehabilitate, replace and expand supporting equipment at the Rama, Visegrad, Grabovica, Salakovac, Bocac, Capljina, and Jablanica hydropower stations.

In addition to improving overall dam safety, investments are also designed to reduce adverse environmental impacts at thermal power stations; replace aging facilities and equipment at hydropower and thermal power stations; rehabilitate distribution systems and introduce a supervision and data acquisition system; establish a market operation system, and improve financial management information systems; and provide technical assistance to facilitate project implementation. The investments in dam infrastructure and operations will both improve dam safety and benefit the ecosystem through improved environmental flows. The infrastructure components of the project consist mainly of replacing existing equipment in existing locations. No land



BOSNIA AND HERZEGOVINA AT A GLANCE

Population: 3.8 million – 47% urban, 53% rural;
–0.11% annual growth rate

Surface area: 51,210 km²

Life expectancy: 74.6 years

GNI per capita: US\$ 3,330

Human Development Index Ranking:
66 out of 177 countries

% below the basic needs poverty line:
19.5% (2001–2002)

MORE INFORMATION

Bosnia and Herzegovina Energy Community of South East Europe (APL3) Program. Project Appraisal Document. World Bank, 2006.

"Energy in South East Europe." Economic Reconstruction and Development in South East Europe. Website of European Community/World Bank.

acquisition or negative influence on surface and groundwater quality are expected.

PROJECT OUTCOMES

Although the project is still under implementation, measurable benefits over the life of the investments are anticipated to include:

- *Increased generation at power plants.* Leakages at dams, and equipment outages as a result of rehabilitation or replacement will be reduced.
- *Reduction in costs.* Operation and maintenance costs will be reduced as a result of improved dam efficiency and safety, as well as the rehabilitation of equipment.
- *Increased revenue.* Additional revenue will result from the reduction in operation and maintenance costs, and from investments in distribution that will result in a reduction in metering costs.
- *Aquatic ecosystem benefits.* Improved operation will benefit the aquatic ecosystem through managed environmental flows.

LESSONS LEARNED

The ECSEE program, as a whole, reflects two main lessons:

- Regional electricity markets require strong national market operational capabilities. They should be built on the progressive integration of energy markets based on energy security needs and national electricity operations.

- Political commitment and adequate financial support are key ingredients for successful reform programs. The regional energy program was developed with the political commitment of the countries of South East Europe and backed by strong donor involvement.

SCALING UP

The project builds on the successful performance of the first two projects of the ECSEE APL program in Romania and Albania. It demonstrates the political commitment of the Government of Bosnia and Herzegovina to integrate within the larger European network and be an active participant in the implementation and operation of the regional energy program. The World Bank estimates that to meet the growing demand for electricity in South East Europe, investments of approximately US\$ 40 billion in power generation, transmission, and distribution are required over the next 15 years. The expectation is that private-sector investors will meet some of these investment needs once South East Europe becomes a financially attractive, EU-compatible energy market.

RELEVANT PROJECT

Infrastructure Rehabilitation Support Project

Project ID: P090666
 Timeline: 2001–2006
 Loan Amount: US\$ 74 million

