BOSNIA AND HERZEGOVINA

PROJECT PERFORMANCE ASSESSMENT REPORT

EMERGENCY ELECTRIC POWER RECONSTRUCTION PROJECT
(CREDIT 2903-BOS)

SECOND ELECTRIC POWER RECONSTRUCTION PROJECT
(CREDIT 3071-BOS)

July 29, 2003

Sector and Thematic Evaluation Group
Operations Evaluation Department
Currency Equivalents (annual averages)

Currency Unit = Konvertible Marka (KM)

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Abbreviations and Acronyms

- BiH: Bosnia and Herzegovina
- EBRD: European Bank for Reconstruction and Development
- EMP: Environmental Management Plan
- EPBiH: Electroprivreda BiH
- EPHZHB: Electroprivreda Hrvatske Zajednice Herceg-Bosne
- EPRS: Electroprivreda Republika Srpska
- EU: European Union
- ICR: Implementation Completion Report
- ISO: Independent System Operator
- MOP: Memorandum of the President
- OED: Operations Evaluation Department
- OHR: Office of the High Representative
- PPAR: Project Performance Assessment Report
- RS: Republika Srpska
- UCPTE: Union pour la coordination de la production et transport d’électricité
- ZEKC: Zajednicki Elektroenergetski Koordinacijski Centar
  (Joint Power Coordination Center)

Fiscal Year

Government: January 1–December 31
OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank’s self-evaluation process and to verify that the Bank’s work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank’s lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers’ comments are attached to the document that is sent to the Bank’s Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank’s work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: http://worldbank.org/oed/eta-mainpage.html).

Relevance of Objectives: The extent to which the project’s objectives are consistent with the country’s current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Possible ratings: High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project’s objectives were achieved, or expected to be achieved, taking into account their relative importance. Possible ratings: High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. Possible ratings: High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. Possible ratings: Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. Possible ratings: High, Substantial, Modest, Negligible.

Outcome: The extent to which the project’s major relevant objectives were achieved, or are expected to be achieved, efficiently. Possible ratings: Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). Possible ratings: Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development objectives and sustainability. Possible ratings: Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.
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This report was prepared by Sunil Mathrani, OEDST Consultant, who assessed the projects in March 2003. The report was edited by William Hurlbut, and Rose Gachina provided administrative support.
### Principal Ratings

**EMERGENCY ELECTRIC POWER RECONSTRUCTION PROJECT (Cr. 2903-BOS)**

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*The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The Evaluation Summary (ES) is an intermediate OED product that seeks to independently verify the findings of the ICR.*

### Key Staff Responsible

**EMERGENCY ELECTRIC POWER RECONSTRUCTION PROJECT (Cr. 2903-BOS)**

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Preface

This is a Project Performance Assessment Report (PPAR) on the Emergency Electric Power Reconstruction and Second Electric Power Reconstruction projects. The former project was partly funded by an IDA Credit of SDR 24.9 million (Cr. 2903-BOS), approved in July 1996 and closed on schedule in December 1998. A Credit of SDR 18.5 million (Cr. 3071-BOS), approved in May 1998, supported the Second Electric Power Reconstruction Project, for which the original closing date of June 30, 2000, was extended until December 2001.

This report is based on the Implementation Completion Reports (ICRs) prepared by the Europe and Central Asia Region (Report no. 19479 dated June 28, 1999, and Report no. 24049, of June 19, 2002), the appraisal documents (Report no. P-6804, July 10, 1996, and Report no. 17510, April 10, 1998) loan documents, project files and discussions with Bank staff. An Operations Evaluation Department (OED) mission visited Bosnia and Herzegovina in March 2003 to discuss the effectiveness of the Bank’s assistance with the government and the project implementing agencies. The collaboration and assistance of all their officials are gratefully acknowledged.

These are the first projects in the Bank’s substantial portfolio to be evaluated by OED since lending operations in Bosnia and Herzegovina began in 1996. Sixteen of these projects were processed as ‘emergency’ operations, one of which is the subject of this evaluation. The only previous OED report on the country to date is a case study of post-conflict reconstruction, published in 2000, but based on fieldwork carried out in 1997.

Following standard OED procedures, the draft of this PPAR was sent to the borrower and cofinanciers for comments before finalization. The borrower’s response is attached as Annex B.
Summary

Attached is the Performance Assessment Report prepared by the Operations Evaluation Department on the above projects. The Emergency Electric Power Reconstruction Project was partly funded by an IDA Credit of SDR 24.9 million, approved in July 1996 and closed in December 1998. A Credit of SDR 18.5 million, approved in May 1998, supported the Second Electric Power Reconstruction Project, which closed in December 2001. Both projects were supported by a large group of bilateral and multilateral cofinanciers.

The objectives of the Emergency Electric Power Reconstruction Project were to (i) restore electricity service to acceptable levels in the major cities and for vital industries; (ii) increase coal production in the most efficient mines to supply the fuel necessary for thermal power plants; (iii) reconfigure the electric power network; (iv) enhance the electricity enterprises' institutional capacity and improve their finances; and (v) support power and coal sector restructuring.

The project achieved notable success in meeting the three most important project objectives: restoring power supply, increasing coal production, and improving utility finances. It has had a highly satisfactory overall outcome. The benefits to the economy as well as to the population of Bosnia and Herzegovina from this project were massive. Within a two-year period electricity supply returned to acceptable levels in all major towns, meeting one of the crucial preconditions for a resumption of economic growth. The estimated EIRR of 48 percent, although very high, probably underestimates the benefits to BiH, since the industrial and service sectors could never have resumed operations without adequate power supply. Project sustainability is assessed as likely, while the institutional development impact was substantial. Bank and borrower performance during the project are rated as highly satisfactory because rapid and efficient implementation by both the Bank and borrower staff meant that the project was completed and fully disbursed only three years from identification.

The primary objective of the Second Electric Power Reconstruction Project was to restore electricity supply in BiH at least cost. The secondary objective of the project was to improve cost recovery by the three electricity utilities. A third unstated objective was to reduce the environmental impact of electricity generation in Bosnia and Herzegovina.

The project successfully increased the capability of the utilities to expand their production and sales of electricity. Collectively they raised the demand served in their operating areas by about 20 percent in three years. It also permitted the restoration of electricity supply to over 60,000 post-conflict returnees in rural areas. More modest progress was recorded in reducing energy losses, which remain unacceptably high (25–30 percent), in the areas served by two of the country’s three public utilities (EPRS and EPHZHB). The reduction of atmospheric dust pollution and contamination of water bodies at coal-fired power plants can be attributed to investments funded under the project.

The project outcome is rated as satisfactory and the project’s sustainability as likely. The institutional development impact of the project is rated as substantial, because of the
progress recorded in bringing staff from the three utilities to work together on common issues, especially power trading, and in raising awareness of the importance of the environmental aspects of power generation. Bank and borrower performance was satisfactory.

The key finding from these projects is that when electricity supply cannot be organized in a manner that is technically and economically optimal, there are high costs to a country in terms of lost efficiency and economies of scale.

The project experience offers two lessons:

- Power sector restructuring in a heavily coal-based power system cannot be delinked from reform of the coal industry because of the predominance of coal in the cost of producing electricity from it. Reforms in both sectors should be addressed in parallel, or preferably coal sector reforms should precede electricity, but not lag behind.

- Experience with tariff increases and improved revenue collection in the immediate aftermath of the peace accord shows that consumers are willing to contribute to the cost of the rapid restoration of electricity supply.

Gregory Ingram
Director-General
Operations Evaluation
1. Background

1.1 Following the breakup of Yugoslavia in 1991, triggered by the secession of Slovenia and Croatia, the independent state of Bosnia and Herzegovina (BiH) was established in February 1992. Refusal by the Bosnian Serb leadership to accept incorporation into the new state led to a three-year civil war. The hostilities and accompanying ethnic cleansing led to the death of a quarter of a million Bosnians, massive displacement of people within the country, and the exodus of a million refugees. The war shattered the economy, particularly its infrastructure, housing stock, and industrial base. Just the most urgent reconstruction needs were put at US$5 billion. BiH’s pre-war GDP of about US$9 billion shrank to about US$2 billion.

1.2 The Dayton peace accords of November 1995 laid out a new political structure for BiH that brings together two “entities,” the Bosniac-Croat Federation of Bosnia and Herzegovina and the Serb Republic Srpska (RS), under a State that was deliberately (and unusually) weak. The latter does not have responsibility for national defense or the police and has no sources of revenue other than transfers from the entities. As pointed out by OED’s study of post-conflict reconstruction, ‘the State “has virtually no capacity to bring about agreement or compliance on the part of its citizens or constituent jurisdictions...the state machinery is extraordinarily lacking in resources and institutional capability.”’ At the same time, governmental functions in BiH take place at four levels: state, entity, cantons (in the Federation) and municipalities, giving the country one of the world’s highest per capita levels of public administration. While the Dayton accords were an astute political compromise necessary to ensure peace, the complex structures they gave birth to have made the task of economic reconstruction and development even more challenging than usual.

1.3 Before the civil war, BiH had a single, vertically integrated electric power system with an installed capacity of 4,000 MW and 1.4 million consumers. It produced nearly 15,000 GWh in 1991, while electricity consumption was over 11,000 GWh and peak load was nearly 2,000 MW.

1.4 The electricity supply installations in BiH were specifically targeted and heavily damaged during the civil war. All of the 400 kV and most of the 220 kV lines were put out of action. Overhead distribution networks and substations in many towns were severely damaged and several cities were entirely without power for more than two years. Many electricity facilities had to be de-mined before they could be inspected and repaired. The utility buildings, equipment, and vehicle fleets were all decimated. Damage to coal mines meant that power plants that were relatively unscathed could not generate at full capacity due to difficulties in mining and transporting coal to them.

1.5 Following the quasi-partitioning of the country along communal lines during the war, the electricity system was also divided into three new enterprises, Electroprivreda BiH (EPBiH) for the Bosniac community, Electroprivreda Republika Srpska (EPRS) for Bosnia and Herzegovina: Post-Conflict Reconstruction, Kreimer et al. 2000, OED Country case study series.
the Serbian regions and Electroprivreda Hrvatske Zajednice Herceg-Bosne (EPHZHB) for the Croatian community. Each of these new (integrated) utilities has continued to operate separately since the 1995 peace accords, even though BiH has a population of only 4 million.

1.6 As can be seen from the key indicators in Table 1, except for installed generation capacity, the totals for the three enterprises do not yet equal the figures for the combined enterprise a decade earlier. High voltage electricity consumption by industry has only recovered to about a third of its prewar level. Access to electricity among households is almost universal, with the exception of some abandoned villages where refugees are now returning. Supply is restored as part of the donor-funded programs to encourage returnees.

| Table 1: BiH Electricity Sector Key Indicators, 2001 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Generation      | Gross           | Sales           | Electricity     | Number          | Number          |
| capacity (MW)   | generation (GWh)| (GWh)           | exports (GWh)   | of consumers    | of staff        |
| EPBiH           | 1,855           | 5,115           | 4,655           | 1,600           | 611,000         | 6,300           |
| EPRS            | 1,391           | 4,676           | 3,720           | 1,620           | 420,000         | 7,466           |
| EPHZHB          | 762             | 1,639           | 3,026           | —               | 160,000         | 1,745           |
| **Total**       | **4,008**       | **11,430**      | **N.A.**        | **N.A.**        | **1,191,000**   | **15,500**      |

Source: EPBiH, EPRS, EPHZHB

a. Including about 1,300 coal mining staff.
b. Cannot be added up as they include transactions between the three companies.

1.7 Operational performance of the three utilities at the generation and transmission levels appears to be reasonably satisfactory. However, this is not the case for distribution, where the electricity losses of two of the three utilities remain unacceptably high. Distribution losses in 2002 were 9 percent, 27 percent and 27 percent for EPBiH, EPHZHB, and EPRS, respectively. A significant portion of these losses is due to non-technical factors such as illegal connections and unmetered consumption. Much more needs to be done in the short term to address the weak commercial performance of the sector.

1.8 Each utility has its own dispatch center and because the frequency of the three is not synchronized, their ability to optimize electricity exchanges between themselves and their neighbors is constrained. The fragmented nature of the sector considerably reduces

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2. For example, total electricity production in BiH was 11,430 GWh, or more than 20 percent below the 1991 level.

3. Transmission losses in 2001 were 2.8 percent, 1.3 percent and 2.5 percent of total electricity supply for EPBiH, EPHZHB, and EPRS, respectively.

4. The data for EPRS are unreliable and the actual figures may be higher.

5. EPRS is synchronized with the Serbian power utility, while EPBiH and EPHZHB are synchronized with the Croatian utility.
the potential benefits from economies of scale and closer operational coordination. The inability to organize electricity supply on a technically and economically optimal basis means that the country pays a significant cost penalty for its political and administrative fragmentation. However, this is by no means unique to electricity and most other public services are in a similar situation.

2. Emergency Electric Power Reconstruction Project

PROJECT OBJECTIVES

2.1 The objectives of the project as stated in the Memorandum of the President (MOP)\(^6\) were (i) to restore electricity service to acceptable levels in the major cities and for vital industries; (ii) to increase coal production in the most efficient mines to supply the fuel necessary for thermal power plants; (iii) to reconfigure the electric power network; (iv) to enhance the electricity enterprises’ institutional capacity and improve their finances; and (v) to support power and coal sector restructuring.

2.2 Five objectives is too many for an emergency recovery project. The Bank’s guidelines\(^7\) for such operations (which pre-date this project) recommend that multiple objectives be avoided. The first two objectives were clearly of highest priority. Emergency recovery projects are not intended to address policy issues relating to sector restructuring. On the other hand, the project had no explicit environmental objective, although important environmental improvements were funded by the project.

PROJECT DESIGN

2.3 The project beneficiaries were EPBiH\(^8\) and RUT, the Tuzla coal company. Inclusion of the latter was an indispensable precondition to increasing power generation. The other two power utilities (EPRS and EPHZHB) had to be excluded from the project because their legal status and the ownership of their assets in their operating areas were unclear at the time of appraisal.\(^9\) Their omission was partially covered by funding from other donors and their inclusion in the subsequent two Bank-funded projects.

2.4 Even though the project was overwhelmingly for emergency reconstruction, Bank staff envisaged that it was likely to be only the first phase in a series of power sector interventions. Hence, studies to design medium and long-term restructuring strategies were also included in the scope of the project. This was far-sighted but now appears to have been premature.

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6. Report # P-6804-BIH dated July 10, 1996. There was no PAD. A technical annex accompanied the MOP.
8. It had been a previous borrower from the Bank, for the Mostar hydroelectric project in 1983 (Ln. 1561-YU)
9. Reconstruction needs in the Croat and Serbain areas were funded in parallel by other donors.
2.5 As early as the appraisal of the first project in 1996, the Bank had a clear vision that “the transmission system could be unified under a single authority to ensure the optimization of power transmission and permit effective power trading as well as system stabilization.” A sector restructuring study was envisaged as part of the project to examine the possible options for the future institutional arrangements.

PROJECT IMPLEMENTATION

2.6 As befits an emergency reconstruction project, the operation was processed on an accelerated footing — only seven months elapsed between the initial Executive Project Summary (EPS) and Board presentation in July 1996. Due recognition should be given to this, taking into account the operational difficulties of making site visits at that time. Physical implementation began even sooner under special financing arrangements. Rapid and efficient implementation by both the Bank and borrower staff meant that the project was completed and fully disbursed on schedule by end-1998, only three years from identification. This is a noteworthy achievement, especially in the light of the large financing gap at the time of Board presentation and the participation of over a dozen cofinanciers with different procurement and disbursement procedures.

EVALUATION RATINGS

Overall Project Outcome

2.7 As described in the ensuing paragraphs, the excellent ratings for the main OED evaluation criteria (relevance, efficacy, and efficiency), lead this PPAR to assess the overall outcome of the project as highly satisfactory.

2.8 Before the civil war BiH was a middle income developing country with a diversified economy, a large industrial sector and universal access to electricity. The loss of unrestricted, regular, and reliable electricity supply was therefore felt particularly acutely. Restoration of electricity supply was both urgent as well as vital to the resumption of normal life and economic activity. In quantitative terms, electricity production from EPBiH’s rehabilitated plants rose by two-thirds, to over 2,400 GWh, by the time of project completion. RUT’s coal production doubled between 1996 and 1998 to over 2 million tons, keeping pace with the needs of the power sector. Thus within a two-year period electricity supply returned to acceptable levels in all major towns,

10. Para 27 (a) of the Technical Annex to the MOP.
11. It was undertaken separately in 1997 by consultants funded by USAID.
12. A project startup advance for a number of emergency projects had been arranged from the Bank’s Trust Fund for BiH, before its formal membership in the WBG as a successor state to the former Federal Republic of Yugoslavia.
13. US$63 million out of a total project cost of $196 million.
14. More details are contained in the ICR.
meeting one of the crucial preconditions for a resumption of economic growth\textsuperscript{15}. Excellent results were also achieved in the financial area as energy losses in the EPBiH distribution system fell sharply and there were major improvements in meter reading, billing, and revenue collection. Tariffs were also raised to nearly US 7 cents/kWh on average, despite the post-war economic hardships faced by the majority of the population. In 1998, EPBiH’s revenue collections reached 110 percent of its cash operating expenses, above the covenanted level of 100 percent.

\textbf{Relevance of Objectives}

2.9 The project’s objectives were all \textbf{highly relevant} to the most pressing problems in the electricity sector and were consistent with the overall CAS approach to post-conflict reconstruction in BiH. While the first three objectives were short-term in nature and were fully achieved, the latter two objectives are more long-term and are still relevant to the current sector and country strategies.

\textbf{Efficacy}

2.10 The overall efficacy of the project is assessed as \textbf{high} because of the notable success in achieving the three \textit{most relevant} and important project objectives: restoring power supply, increasing coal production, and improving utility finances. There was also some progress in the achievement of the secondary objectives, but as stated earlier (para. 10), these objectives probably should not have been part of an emergency recovery operation.

\textbf{Efficiency}

2.11 The benefits to the economy as well as the population of BiH from this project were massive. The ICR estimates the EIRR to have been 48 percent. This is probably an underestimate, since it only includes incremental sales valued at prevailing tariffs as a measure of benefits. It is clear that the industrial and service sectors in BiH could never have resumed operations without adequate power supply. Similarly, the welfare gains to domestic consumers from the restoration of their access to electricity was enormous. Finally, the EIRR does not capture the considerable environmental benefits from the reduction in atmospheric and water pollution that was achieved as a result of investments funded by the project. The project’s efficiency is therefore assessed as \textbf{high}.

\textbf{Sustainability}

2.12 EPBiH’s recovery from the damage inflicted by the civil war is largely complete. It has developed into a relatively strong and well-run utility. Technical performance standards are fairly good, although there is evident scope for efficiency gains, cost

\textsuperscript{15} As noted in the preface to OED’s case study (op. cit.) of post-conflict reconstruction in BiH, “The overall short-term objective of jump starting the economy was achieved, along with a rapid and visible improvement in the restoration of basic infrastructure (for example, housing, transportation and power).”
reductions, and improvements in operational and financial performance. Overall project sustainability is therefore rated likely.

Institutional Development Impact

2.13 The emphasis the project placed on cost recovery, tariff adjustments, and improvements in revenue collection (para. 16) produced good results in EPBiH's financial performance. This was an important institutional development aspect of the project as it signaled to consumers that they had to be prepared to contribute to the restoration of a satisfactory power supply.

2.14 The project also triggered key preparatory studies for power sector restructuring and an improved legislative framework for electricity, which were to prove useful in the subsequent phase of sector rehabilitation (paras. 33–34).

2.15 The most significant impact of the project in skill development was on the Project Implementation Unit (PIU) of EPBiH. Through implementing the project, it developed considerable skills in international procurement using funding agency procedures. It also demonstrated good performance in contract management and project monitoring. Preparation of bidding documents can now be undertaken in-house. All these skills were put to good use in the two follow-on projects.

2.16 The overall institutional development impact of the project is therefore assessed as substantial.

Bank Performance

2.17 Overall Bank performance is assessed as highly satisfactory. The project objectives were highly relevant to the Bank's strategy for the country and the project design and quality at entry were good, despite the concerns flagged in the ICR about overly complex cofinancing and procurement arrangements. The credit was processed expeditiously within the Bank and adequate resources were devoted to supervision. Missions were undertaken frequently and implementation was facilitated by the presence of a full-time staff member for the sector in the Bank's Sarajevo office. The Bank played a very active role in donor coordination and resource mobilization for the project.

Borrower Performance

2.18 The implementing agencies were fully involved in project preparation and displayed a high degree of project ownership. An initial estimation of reconstruction needs was prepared by EPBiH in 1994, well before the Dayton peace accords were signed. This proved a valuable starting point for the design and preparation of the project. The involvement of staff with previous experience on Bank-funded projects also helped. Implementation was challenging, but was achieved in a timely manner, thanks to the collective efforts and dedication to speedy results by all involved. PIU staff in particular
performed outstandingly. Overall performance by the borrower is therefore rated as highly satisfactory.

3. Second Electric Power Reconstruction Project

PROJECT OBJECTIVES

3.1 As stated in the appraisal document, the primary objective of the project was to restore electricity supply in BiH at least cost. The project aimed to help restore generation, transmission, and distribution systems to meet at least part of the expected increase in demand within BiH, reconnect many consumers who were still without power after the war, and reduce power outages, variations in voltage level, and other quality of service defects.

3.2 The secondary objective of the project was to improve cost recovery by the electricity companies, to ultimately make them financially autonomous of the government.

3.3 A third and unstated objective of the project was to reduce the environmental impact of electricity generation in BiH. This is apparent from the inclusion of funding for investments in pollution control technologies at coal-fired power stations.

3.4 Surprisingly, neither coal and power sector policy reforms nor restructuring were mentioned in the statement of project development objectives, even though these were clearly part of the Bank's strategy for the energy sector and important actions in these areas were to be initiated under the project, backed up by dated covenants.

3.5 The project's underlying philosophy was that it should contribute to nation building, although this was not explicitly spelt out in the project objectives either. The donor community was keen to build a new state of BiH from its constituent parts. Promoting collaboration on technical matters and then encouraging economic transactions was (and is) seen as a way of building confidence and links among the three communities in BiH. However, the minutes of the credit negotiations make it clear that promoting greater exchanges of electricity among the three utilities is a major rationale for the project. Covenants to this effect, as well as for the operation of a technically integrated power system were incorporated in the Project Agreements with them.

PROJECT DESIGN

3.6 The second Bank operation in BiH's power sector was designed as a "transitional" project spanning a period when the country moved out of the immediate post-conflict emergency reconstruction into a more normal mode of economic

16. OED guidelines permit the evaluator to define a project's "revealed objectives," which then provide the basis of the overall project evaluation.

development. For example, in this project (unlike in the first) the electricity utilities were clearly expected to contribute to financing the local costs of their investment programs.\textsuperscript{18}

3.7 The project was more complex than its precursor because all three electricity utilities were implementing agencies and because policy actions for sector reforms were included. The latter were an integral part of the project, as evidenced by the inclusion of dated covenants requiring the submission to the parliaments of draft electricity laws.

3.8 As a precursor to the legislation, electricity policy statements had to be formulated in a coordinated manner between the Federation and the Republika Srpska. This helped to bring technocrats from the two sides to work together on these policy and legislative matters.

3.9 With hindsight, it now appears that the circumstances prevailing in BiH when the project was being designed and prepared would have been more suitable for an Adjustable Program Loan (APL)\textsuperscript{19} rather than a traditional Specific Investment Loan (SIL) with dated covenants. \textsuperscript{20}There was broad agreement with the governments of the two entities on the major sector reform principles, but considerable uncertainty about the time necessary to design and implement them.

3.10 In addition, it now appears that the emphasis given to the policy issues may have been at the expense of more traditional power utility commercialization and capacity-building efforts. All three utilities had been seriously weakened by the loss of skilled personnel during the civil war. Furthermore, because of isolation during the war, they had been cut off from progress elsewhere in utility management practices, particularly in the areas of consumer service, billing, and management information systems (MIS). Considerable knowledge and investment backlog in office technology and good utility management had built up during the 1990s and the project design did not adequately address these issues. The PPAR mission found that these shortcomings still prevail, particularly in EPRS and EPHZHB.

**PROJECT IMPLEMENTATION**

3.11 Project preparation began in late 1996, almost as soon as the Emergency Power Reconstruction Project had been declared effective. Appraisal took place in early 1998

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\textsuperscript{18} Although not initially envisaged, EPBiH did fund some local costs from its own resources even under the first project.

\textsuperscript{19} The project was appraised about six months after the new lending instruments were endorsed by the Executive Directors in August 1997.

\textsuperscript{20} The Region pointed out that "at the time of project preparation, there was little or no experience in using APLs. Bosnia was and is an IDA country, with the size of the IDA credits being relatively small...Dividing the small amount of money available to the power sector into even smaller conditional future releases would not have given the Bank much leverage unless cofinanciers could have been persuaded to treat their lending in the same way."
and Board approval was obtained in May 1998. A six-month delay in effectiveness followed, due to the time required to establish the joint power coordination center, (known by its local acronym ZEKC) to facilitate national and international electricity trading (para. 48). The IDA-funded components of the project\(^1\) suffered some slippage in implementation, but the credit was fully disbursed and closed by end-2001, just over three years after it was declared effective. Most of the other non-IDA components have since been completed, except those financed by the Japan Bank for International Cooperation. These have suffered major delays and may not be finished even by end-2003.

3.12 Setting up ZEKC had become a condition of credit effectiveness when a deadline passed that had earlier been agreed at negotiations (as a dated covenant).\(^2^2\) Bank staff felt that it was important for the success of the project to insist on the prior establishment of ZEKC. This led to a six-month delay in effectiveness. At its creation in late 1998, it was envisaged that by the end of two years, ZEKC would perform dispatch functions for the three electricity enterprises, but this has yet to occur.

3.13 The project successfully increased the capability of the three utilities to expand their production and sales of electricity. Collectively they raised the demand served in their operating areas by about 20 percent in three years, to 9,400 GWh in 2001. It also permitted the restoration of electricity supply to over 60,000 post-conflict returnees in rural areas, which was an important achievement from a social and political perspective.

3.14 More modest progress was recorded in reducing energy losses, which remain unacceptably high (25–30 percent), particularly in the areas served by EPRS and EPHZHB. The least satisfactory results obtained were in the financial area, where none of the three utilities was able to comply with the revenue covenants in the credit. After the spectacular increases in collections recorded in the first project, some slowdown was inevitable, but contrary to expectations in the appraisal document, EPBiH registered an operating loss of KM 78 million (nearly US$ 40 million) in 2001. The losses of EPRS were even larger — KM 134 million (US$ 68 million),\(^2^3\) although EPHZHB managed to break even.

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21. Which represented only 16 percent of the total project.

22. The covenant for setting up ZEKC agreed at negotiations set a date of July 1998, based on the assumption that the credit would already have been effective at this time.

23. EPRS's accounts have been seriously qualified by its auditors for several years. A recent (February 2003) investigation into its commercial and financial operations by OHR casts doubts on the accuracy of the data provided to the Bank on its revenue collections and electricity losses.
EVALUATION RATINGS

Overall Project Outcome

3.15 The overall outcome of the project as assessed as satisfactory because of the relevance of its objectives and the substantial achievement of the principal objectives. Shortcomings in meeting the project’s financial objectives prevent a higher overall rating.

Relevance of Objectives

3.16 This PPAR considers the project’s “revealed objectives” (para. 29) to be at least as important as those stated in paras. 27–28. The project’s relevance and its consistency with the Bank’s current country and sectoral assistance strategy is assessed as high, primarily because of the revealed rather than stated objectives.

Efficacy

3.17 The overall efficacy of the project is assessed as substantial because of the good results achieved in pursuit of the project’s major objectives, regardless of whether they were explicit or not, that is, restoring and extending access to electricity, reducing the adverse environmental impacts of coal-fired power generation, and initiation of power sector reforms such as the enactment of new electricity laws and the creation of ZEKC. However, there was much less progress in achieving the secondary objective of improving cost recovery by the utilities.

Efficiency

3.18 According to the ICR the re-estimated EIRR on a time slice of the utility investment program is 16 percent as against the 26 percent calculated at appraisal due to higher costs and lower tariffs.24 Nevertheless, this is above the 12 percent opportunity cost of capital. The project’s efficiency is therefore assessed as substantial.

Sustainability

3.19 The rehabilitation and environmental investments carried out as part of the project are likely to be sustainable, because the three utilities are technically and managerially able to ensure their longevity. Although there is some uncertainty about the pursuit of power sector reforms, these are far from complete, making a considered judgment on them difficult. Given the preponderance of physical investments in this project, overall sustainability is rated as likely, despite the decline in the sector’s financial performance.

24. Both estimates exclude the consumer surplus.
Institutional Development Impact

3.20 The institutional development impact of the project is assessed as substantial because of the progress recorded in pursuit of power sector reforms (paras 48-49), its role in bringing staff from the three utilities to work together on common issues, especially power trading, and in raising awareness about the importance of the environmental aspects of power generation.

Bank and Borrower Performance

3.21 The overall performance of both the Bank and the borrower is assessed to be satisfactory. The efficiency of staff and the dedication to rapid project implementation demonstrated under the first project (paras. 23 and 26) was sustained under the second project.

4. Sectoral Issues

POWER SECTOR RESTRUCTURING

4.1 As mentioned in para. 38, ZEKC was expected to become the independent system operator for entire BiH system within two years of its creation. It has received bilateral assistance from the U.K. and Spain, including a state-of-the-art, real-time monitoring system linked to the three utility dispatch centers, which enables it to track bulk electricity flows. But progress toward making it the system operator, as agreed under the subsequent Third Electric Power Reconstruction Project (Power III), has stalled recently. Four years after it was set up, ZEKC can do no more than monitor and record bulk flows of electricity in BiH. Even its legal status has been problematic and it operates as a business association of the three utilities rather than as a state enterprise or private company. The rehabilitation of the 400 kV network (which has yet to be carried out as part of Power III), is crucial to enabling ZEKC to become the system operator and it is now apparent that the original timetable for transforming it into the ISO was over-optimistic. Despite reservations, the two Entity governments are still officially committed to establishing a single transmission company for BiH, and to setting up of a single independent system operator once the 400 kV system is fully operational.

4.2 Electricity laws have been passed at the State and Entity levels that, among other things, provide for the establishment of three regulatory agencies. While it would have been simpler and less costly for BiH to have a single electricity law and single regulatory agency, this was not feasible under the political set-up established under the Dayton peace accords. Ensuring coordination and a consistency of approach is likely to prove a

25. In the post-war context of nation-building, the seemingly innocuous collaboration between the utilities necessitated by the project, carried considerable political and symbolic significance.

26. A draft law has been prepared at the State level for establishment of the single transmission company that would be jointly owned by the Entity governments in proportion to the value of the assets contributed.
major challenge when these bodies begin functioning\textsuperscript{27}. Given the scarcity of regulatory expertise of any kind in BiH, it is far from clear how these regulatory agencies will be adequately staffed.

4.3 The creation of an inter-governmental steering committee for power sector reforms with representation from all involved parties is clearly needed to improve coordination and the harmonization of approaches\textsuperscript{28}. Ambitious plans for unbundling or restructuring of the three power utilities on functional lines have been prepared by consultants and are currently under discussion. The reform proposals have been devised by a small circle comprising the utilities, their governments, the consultants, and the aid donors. Until the time of the PPAR mission, no attempt had been made to open participation to all stakeholders. Greater public debate of these reforms in civil society and with stakeholders such as the labor unions and consumer representatives would be desirable as a way of building broader support for reforms\textsuperscript{29}.

4.4 Implementation is likely to be complex and will be phased in over several years\textsuperscript{30}, with the goal of creating multiple generation and distribution companies that could eventually be privatized. These would be organized functionally and geographically, rather than purely on Entity lines, so as to assist in the formation of BiH’s single economic space.

4.5 In the transitional phase, it would be desirable for the three public utilities to benefit from access to hands-on expertise provided by other electricity companies that have undergone similar restructuring during the past decade. Such assistance would probably need to be funded by the donor community, at least for EPHZHB and EPRS.

**Environmental Issues**

4.6 At the time the first project was appraised, Bank staff were clearly aware that while funding of rehabilitation of the highly polluting, coal-burning Tuzla and Kakanj power stations was vital for the quick restoration of power supply, it would be necessary for the Bank not to insist on applying its usual environmental standards as a condition of its participation. This pragmatic approach was appropriate given the emergency nature of the project and the urgency of implementing it. The same approach was also applied to the funding of spares and equipment for the RUT coal mines, where the rigid insistence on the application of environmental safeguards would have led to major delays\textsuperscript{31}.

\textsuperscript{27} The process of nominating members to the regulatory commissions is proving to be much slower than anticipated.

\textsuperscript{28} This has been agreed to in principle by the main parties.

\textsuperscript{29} This process began in April 2003 with a televised panel discussion, after the OED mission.

\textsuperscript{30} Although the present schedule appears to be overly-compressed.

\textsuperscript{31} Attachment 8 of the Technical Annex to the PR summarizes the EMP, but makes no mention of the project’s coal component.
4.7 The Bank's operational policy for emergency recovery assistance (OP 8.50) is silent on the issue of environmental procedures to be followed for emergency recovery loans. However, the accompanying BP 8.50 explicitly emphasizes the importance of speed and recommends that the project identification-preparation-appraisal phase should be completed in six weeks. Observing such a tight processing schedule implicitly means that environmental guidelines have to be set aside in emergency lending.

4.8 However, the appraisal of the second project was carried out in line with normal Bank procedures and guidelines since it was not an emergency recovery loan. As an environmental category B project, Environmental Management Plans (EMPs) were prepared for the four thermal power plants, Tuzla, Kakanj, Gacko, and Ugljevik and these were found satisfactory after appropriate review.

4.9 The modernization of the ash transportation systems at Tuzla and Gacko power plants, the repair of electrostatic precipitators and the installation of an environmental monitoring system at Tuzla, the reduction of dust pollution, and contamination of water bodies at Kakanj power plant, can all be attributed to investments funded under these two projects.

4.10 The PPAR mission's brief visit to three of these listed plants found some evidence of progress in reducing atmospheric emissions at all the plants, particularly of particulates. Nevertheless, as shown in Table 2, there is still a considerable gap to be closed to meet EU norms. However, doing so is likely to require major investments, such as in desulfurizing equipment, which may only be justified if the plants continue to be operated for a long period. Given the age of some units, particularly at Kakanj, environmental upgrading may not be justified.

### Table 2: Atmospheric Emissions from EPBiH Coal-Fired Power Plants (mg/nm³)

<table>
<thead>
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<td></td>
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<td>Tuzla Unit 3</td>
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<td>EU Norm</td>
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<td>50</td>
<td>310</td>
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</table>

Source: EPBiH

4.11 Higher emissions standards probably have been adopted sooner in BiH power plants as a result of the involvement of foreign funding agencies. Had these plants not been selected for repair or rehabilitation as a result of the post-conflict inflow of investment resources, it is unlikely they would have adopted such norms by now.

4.12 On the other hand, hydraulic ash disposal from Unit 3 at the Tuzla plant remains problematic and does not appear to comply with current environmental practices. The ash

32. Para 8, BP 8.50, August 1995.
33. Rehabilitated with IDA funds.
disposal “lake” is almost full and the waste water flows untreated into a nearby river.\textsuperscript{34} Switching to dry ash disposal (as is done for several of the other units at the same plant) was to have been part of the Power III project, but has been shelved for lack of funds\textsuperscript{35}. This is unsatisfactory and the Bank should avoid exposing itself to an unnecessary reputational risk by not making adequate provision for an environmentally acceptable system of ash disposal\textsuperscript{36}. Ideally, a satisfactory solution to the problem should have been included in the scope of Power II. Testing of the chemical composition of the water outflow from the ash ‘lake’ and carrying out the environmental rehabilitation of the wet ash ‘lake’ deserve priority attention under Power III. Finding funds for a dry ash disposal system for Unit 3 would be advisable if this unit is to be kept in service.

\section*{Coal Sector Issues}

4.13 BiH has a large and varied coal mining industry that mainly produces brown coal and lignite for power generation. The bulk of BiH’s electricity generation\textsuperscript{37} is based on these fuels and coal can account for as much as two-thirds of the cost of generating electricity, given the age and type of plants in service in BiH. Coal\textsuperscript{38} accounted for 48 percent of EPBiH’s total operating expenses in 2001.

4.14 In the 1980s was as much as 18 million tons of coal was produced per year with about 26,000 employees. Mining is undertaken by two main coal enterprises in the Federation, while in the Republika Srpska most coal mines belong to the power utility, EPRS. The industry suffers from serious overcapacity, as annual production is now only about 6 million tons. Substantial levels of overstaffing\textsuperscript{39} and an acute shortage of funds for restructuring add to its difficulties.

4.15 Nevertheless, a restructured coal industry appears to have a secure long-term future as the predominant primary energy source for electricity. It is highly unlikely that imported gas or coal for baseload generation could be delivered to BiH’s thermal power plants at a financially competitive price. But much needs to be done to consolidate production in the most economical mines and to shutdown those that cannot be made viable. Provided this occurs, BiH’s coal for power generation could be produced for under US$2 per gigajoule, which is considered to be an economically competitive level.

4.16 The second power project included investments for the rehabilitation of several coal mines as well as studies to prepare for coal sector restructuring. These components

\begin{itemize}
\item[34.] As OED did not have access to the EMP for the Tuzla plant, it is unclear if the problem was identified and remedial measures proposed in the EMP.
\item[35.] The Region pointed out that EBRD is providing cofinancing of E20 mn for environmental upgrades at all four thermal power plants in BiH.
\item[36.] The Region agreed to look in to the issue and follow up with EPBiH.
\item[37.] In 2001 coal accounted for 70 percent of EPBiH’s generation. The share varies from year to year, depending upon hydrological conditions, which were relatively good in 2001.
\item[38.] Including the transportation cost to the power plants.
\item[39.] Over 10,000 miners are estimated to be surplus to requirements in the Federation alone.
\end{itemize}
were to be carried out with bilateral funding from Japan and the United States. The
studies are now available, but the investments have yet to be carried out. Following the
completion of the first (emergency) project in which about US$5 million of IDA funds
were used for the needs of the coal industry, the Bank did not directly finance any further
investments or studies in the coal sector, but remained involved in matters relating to coal
in a review or advisory capacity. The Bank’s Regional management was apparently
unwilling to address the politically and socially difficult problems associated with
reducing coal industry employment. This is unsurprising, given the already high very
unemployment in BiH and the fragility of the political system.

4.17 The PPAR mission’s discussions in BiH would seem to indicate that there is fairly
widespread realization within the Federation’s energy industry that reforms are now
necessary and that an adequate technical and economic basis for coal sector restructuring
exists in the form of the various consultant studies that have been carried out recently. However, there is little knowledge of how the coal industry was restructured elsewhere,
particularly in other transition countries, and of the possibilities for financial support
from donors for such programs. Given the Bank’s wide experience of coal restructuring,
there appears to be a case for re-engaging in the coal sector in BiH, especially given the
close links between coal and power. Least-cost electricity production needs efficient and
viable, low-cost coal suppliers.

5. Findings and Lessons

5.1 The following findings emerge from the performance assessment of these two
projects:

- When electricity supply cannot be organized in a manner that is technically and
economically optimal there are high costs to a country in terms of lost efficiency
and economies of scale.

- In the face of political obstacles, it may be slightly easier in electricity than in
other sectors to bring about greater trade across frontiers because electricity is not
a highly visible commodity and the presence of power lines is no indicator of
whether power is flowing or in which direction. However, BiH is probably unique
in electricity being used to spearhead internal political unification and nation
building. The jury is still out on whether this tactic can succeed.

- The Bank can deliver successful emergency reconstruction projects on a fast track
basis, despite internal constraints that work against rapidity.

40. The Region pointed out that “...significant funds are required for the social costs [of restructuring] and
for the concurrent investments for the mines. The Bank is under tremendous pressure to be selective [in its
lending] as the availability of IDA funds shrank from US$100 million/year under IDA12 to US$30 mn/yr
under IDA14.”

41. The OED mission was not able to ascertain the views of the government of the Republika Srpska on
this issue.
• The Bank's current guidelines for emergency recovery projects do not explicitly indicate whether it is acceptable to *not* apply the Bank's usual environmental safeguards to such projects for reasons of urgency and speed of processing.

5.2 The experience offers two lessons of note:

• Power sector restructuring in a heavily coal-based power system cannot be delinked from reform of the coal industry because of the predominance of coal in the cost of producing electricity from it. Reforms in both sectors should be addressed in parallel, or preferably coal sector reforms should precede electricity, but not lag behind,

• EPBiH's experience with tariff increases and improved revenue collection in the immediate aftermath of the peace accord, shows that consumers are willing to contribute to the cost of the rapid restoration of electricity supply.
Annex A: Basic Data Sheets

BOSNIA AND HERZEGOVINA: EMERGENCY ELECTRIC POWER RECONSTRUCTION PROJECT

Key Project Data (US$ millions)

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Cumulative Estimated and Actual Disbursements (in US$ millions)

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Date of final disbursement: April 28, 1999

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## Mission Data

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<td>S</td>
</tr>
<tr>
<td>Supervision 5</td>
<td>October 1997</td>
<td>3</td>
<td>S</td>
</tr>
<tr>
<td>Supervision 6</td>
<td>June 1998</td>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>Supervision 7</td>
<td>November 1998</td>
<td>3</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FA, PE, ME, FA</td>
<td></td>
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</table>


Performance ratings: S: Satisfactory.
BOSNIA AND HERZEGOVINA: SECOND ELECTRIC POWER RECONSTRUCTION PROJECT

**Key Project Data (US$ millions)**

<table>
<thead>
<tr>
<th></th>
<th>Appraisal estimate</th>
<th>Actual or current estimate</th>
<th>Actual as % of appraisal estimate</th>
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</thead>
<tbody>
<tr>
<td>IDA Credit</td>
<td>25.0</td>
<td>23.97</td>
<td>95.9</td>
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<td>Cofinancing</td>
<td>111.86</td>
<td>102.38</td>
<td>91.5</td>
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<td>Government</td>
<td>32.88</td>
<td>32.65</td>
<td>99.3</td>
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<tr>
<td>Total Project Costs</td>
<td>169.74</td>
<td>159.00</td>
<td>93.7</td>
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</table>

**Cumulative Estimated and Actual Disbursements (in US$ millions)**

<table>
<thead>
<tr>
<th></th>
<th>FY98</th>
<th>FY99</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
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<tr>
<td>Appraisal estimate</td>
<td>1.2</td>
<td>20.0</td>
<td>25.0</td>
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<tr>
<td>Actual</td>
<td>0</td>
<td>0.53</td>
<td>5.74</td>
<td>19.39</td>
<td>23.97</td>
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<tr>
<td>Actual as % of estimate</td>
<td>0</td>
<td>2.7</td>
<td>23</td>
<td>78</td>
<td>96</td>
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</tbody>
</table>

**Project Timetable**

<table>
<thead>
<tr>
<th></th>
<th>Original</th>
<th>Actual</th>
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<tbody>
<tr>
<td>Identification/Preparation</td>
<td>September 1, 1998</td>
<td>October 1996</td>
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<tr>
<td>Approval</td>
<td>March 1, 1999</td>
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<tr>
<td>Effectiveness</td>
<td>October 1, 1999</td>
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<td>Mid-term review</td>
<td>June 30, 2000</td>
<td>December 1, 2001</td>
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<td>Credit closing</td>
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**Staff Inputs (staff weeks)**

<table>
<thead>
<tr>
<th></th>
<th>Actual weeks</th>
<th>Actual US$000</th>
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</thead>
<tbody>
<tr>
<td>Identification/Preparation</td>
<td>110</td>
<td>200</td>
</tr>
<tr>
<td>Appraisal/Negotiation</td>
<td>90</td>
<td>199</td>
</tr>
<tr>
<td>Supervision</td>
<td>210</td>
<td>511</td>
</tr>
<tr>
<td>Completion</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>418</td>
<td>935</td>
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</table>
## Mission Data

<table>
<thead>
<tr>
<th>Date (month/year)</th>
<th>No. of persons</th>
<th>Specializations represented</th>
<th>Performance rating</th>
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</thead>
<tbody>
<tr>
<td>Identification/Preparation</td>
<td>June 1997</td>
<td>3</td>
<td>SPE, EE, CME</td>
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<tr>
<td></td>
<td>September 1997</td>
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<td>Appraisal/Negotiation</td>
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<tr>
<td>Supervision 1</td>
<td>June 1998</td>
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<td>Supervision 2</td>
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<td>TM</td>
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<td>Supervision 4</td>
<td>May 1999</td>
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<td>TM, FA, ES, C, EnE, ME</td>
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<tr>
<td>Supervision 5</td>
<td>November 1999</td>
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<td>TM, EE, FA, PA, SEE, EnE, FMS, C(2)</td>
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<td>Supervision 6</td>
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<td>Supervision 7</td>
<td>October 2000</td>
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<td>Supervision 8</td>
<td>May 2001</td>
<td>2</td>
<td>TM, E</td>
</tr>
</tbody>
</table>

ICR


Performance ratings: S: Satisfactory.
Annex B: Borrower Comments

JP ELEKTROPRIVREDA BiH s.p.o. SARAJEVO

THE WORLD BANK

Sarajevo, 30.07.2003.g.

Attn: Alain Barbu, Manager
Sector and Thematic Evaluation Group
Operations Evaluation Department
Fax: (202) 522-2123

Subject: Bosnia and Herzegovina
Draft Project Performance Assessment Report
Emergency Electric Power Reconstruction Project (credit 2903-BOS)
Second Electric Power Reconstruction Project (credit 3071-BOS)

Dear Mr. Barbu,

Regarding Draft Project Performance Assessment Report dated on July 2, 2003 I would like to inform you that it is acceptable to us integrally. Also we think that applied evaluation method and evaluation rating for assessed Emergency Electric Power Project Reconstruction and Second Electric Power Reconstruction are made objectively and correct. In order to achieve more precise formulations in the Report we suggest to:

- Change last sentence in Item 57 as follows:
  “Given the age of some units particularly at 32MW Units in Kakanj environmental upgrading on these Units may not justified.”

- Item 59, in first line word “Unit 3” needs to be replaced with word “Unit 5”

With respect,

General Manager

Enver Kreso