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PERFORMANCE AUDIT REPORT

JAMAICA

FOURTH POWER PROJECT
(LOAN 2869-JM)

AND

ENERGY SECTOR DEREGULATION AND PRIVATIZATION PROJECT
(LOAN 3502-JM)

June 25, 1998

Operations Evaluation Department

Currency Equivalents (annual averages)

Currency Unit = Country Currency (J$)

1987	US$1.00	J$5.49
1988	US$1.00	J$5.49
1989	US$1.00	J$5.75
1990	US$1.00	J$7.18
1991	US$1.00	J$12.12
1992	US$1.00	J$22.96
1993	US$1.00	J$24.95
1994	US$1.00	J$33.09
1995	US$1.00	J$35.14
1996	US$1.00	J$37.12
1997	US$1.00	J$35.40

Abbreviations and Acronyms

BOO	Build own and operate
CARICOM	Caribbean Economic Community
CARIFA	Caribbean Basin Projects Financing Authority
CDC	Commonwealth Development Corporation
ESDP	Energy Sector Deregulation & Privatization Project
GOJ	Government of Jamaica
ICR	Implementation Completion Report
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IMF	International Monetary Fund
IPP	Independent power producer
JEP	Jamaica Energy Partners
JPPC	Jamaica Private Power Company
JPS	Jamaica Public Service Company
LOC	Letters of Credit
LRMC	Long-run Marginal Cost
MOB	Management buy-out
NIBJ	National Investment Bank of Jamaica
PPA	Power Purchase Agreement
OED	Operations Evaluation Department
OUR	Office of Utility Regulation
RFP	Request for proposals
SAR	Staff Appraisal Report
SOE	State-owned Enterprise

Fiscal Year

Government & JPS: April 1 - March 31

Director General, Operations Evaluation	: Mr. Robert Picciotto
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The World Bank
Washington, D.C. 20433
U.S.A.

Office of the Director-General
Operations Evaluation

June 25, 1998

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Performance Audit Report on Jamaica Fourth Power Project (Loan 2869-JM) and Energy Sector Deregulation and Privatization (ESDP) Project (Loan 3502-JM)

Attached is the Performance Audit Report prepared by the Operations Evaluation Department (OED) on the above projects, which were respectively approved in FY88 and FY93. Loan 2869-JM was closed in June 1995. Loan 3502-JM is due to close in FY00 when the Loan will refinance maturing CARIFA bonds in a single 'bullet' payment. Even though an ICR has not yet been prepared by the Region on the ESDP Project, it was audited because the activities encompassed by the project have been completed. Cofinancing of US$57.5 million was provided for the ESDP Project by the Inter-American Development Bank.

The objectives of the Fourth Power Project were to improve the operating efficiency of the Jamaica Public Service Company (JPS), and to provide additional installations to serve new customers. The pace of implementation of the Fourth Power Project was slow and though the physical components (which consisted of rehabilitation and extension of the power transmission and distribution system) were completed satisfactorily, the overall project outcome is rated as marginally unsatisfactory (instead of satisfactory in the ICR) because there was no discernible improvement in system operating efficiency or in JPS's financial performance during project implementation. Similarly, the project's institutional development impact is rated as negligible (partial in the ICR). However, sustainability of the project is still considered likely (as in the ICR) as JPS has been, and is expected to continue to be, able to operate and maintain the Bank-financed installations in a reasonably satisfactory, albeit not optimal, manner, and its financial problems are not so severe as to jeopardize its ability to do so. Both Bank and Borrower performance are rated as unsatisfactory by the audit (instead of satisfactory in the ICR) because the Bank should have restructured the project to address power supply shortages that were apparent very early in the life of the project and because the Borrower rarely achieved the agreed operational and financial performance targets.

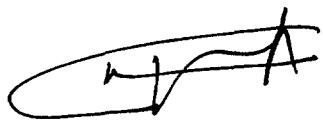
The objectives of the ESDP Project were to: (a) provide urgently needed power generation capacity; (b) establish the enabling environment for attracting private investments in the power sector including a new legal and regulatory framework; and (c) support GOJ's deregulation and privatization program in the energy sector. These objectives were highly relevant to the problems facing the Jamaican energy sector at the beginning of the 1990s.

This innovative project, although complex and ambitious, was well designed. It had an appropriate mix of hardware and software components The project provided funds for the construction of two power generation plants and associated transmission lines, one under public ownership and the other as a private sector venture. The latter, the Rockfort plant, was one of the very first projects where Bank funds were onlent to finance an independent power producer (IPP). The project also assisted in developing a contractual framework for private power projects and a regulatory framework for the power sector and helped the Government devise a privatization strategy for JPS and the oil refinery, Petrojam. It also contributed directly to subsequent improvements in the Bank's procurement guidelines to facilitate the financing of private infrastructure projects under BOO/BOT/BOOT arrangements.

The audit rates the overall outcome of the ESDP Project as only marginally satisfactory, in spite of the above achievements, in the light of the delays incurred in the completion of the Rockfort IPP and of the unfinished structural reforms in the power and petroleum sectors. However, its institutional development impact is assessed as substantial, given the creation of a sectoral regulatory framework and the experience that Jamaica gained in attracting and negotiating private power projects --and later put to good use in arranging subsequent IPPs. The project's sustainability is judged to be likely. Bank performance was satisfactory but Borrower performance is rated as unsatisfactory on balance, in the light of the Government's lack of action on electricity pricing, its lack of clarity in defining the objectives sought through the privatization of sector entities and its demonstrated reluctance to pursue further sector reforms since late 1996.

The main lessons learned from these projects are that: (i) better access to private capital for investment is the primary immediate gain from IPPs; (ii) the explicit cost of power from IPPs appears to be higher than that of equivalent publicly-financed projects, but in a crisis situation when power is scarce and access to capital limited, these incremental costs are much less than the economic cost of power shortages which are avoided; and (iii) it is vital for all parties concerned to be clear about the purpose of privatization of utilities at the outset because multiple objectives may be mutually incompatible; in particular, maximizing fiscal revenues from the sale of assets may conflict with longer-term sector efficiency gains and consumer interests.

Attachment



Contents

This report was prepared by Alain Barbu (Task Manager) and Sunil Mathrani (Consultant) who audited the project in February 1998. Soon-Won Pak provided administrative support.

Principal Ratings

	Loan 2869-JM	
	Audit	*ICR*
Outcome	Marginally Unsatisfactory	Satisfactory
Sustainability	Likely	Likely
Institutional Development	Negligible	Partial
Bank Performance	Unsatisfactory	Satisfactory
Borrower Performance	Unsatisfactory	Satisfactory

	Loan 3502-JM	
	Audit	*ICR not prepared*
Outcome	Marginally satisfactory	No rating
Sustainability	Likely	
Institutional Development	Substantial	
Bank Performance	Satisfactory	
Borrower Performance	Unsatisfactory	

Key Staff Responsible

	Loan 2869-JM		
	Task Manager	*Division Chief*	*Country Director*
Appraisal	J. Bakovic	R. Moscote	P. C. Loh
Midterm	A. Megateli	G. Smith	Y. Abe
(no formal review)			
Completion	E. Zolezzi	P. Ludwig	P. Isenman

	Loan 3502-JM		
	Task Manager	*Division Chief*	*Country Director*
Appraisal	S. Babbar	G. Smith	Y. Abe
Midterm	S. Babbar	K. Challa	P. Isenman
Completion	E. Zolezzi	K. Challa	O. Kalantzopoulos

Preface

This is the Performance Audit report on the Fourth Power Project (Ln. 2869-JM) and the Energy Sector Deregulation and Privatization Project (Ln. 3502-JM) in Jamaica for which the Bank respectively approved loans of US$18 million in August 1987 and US$60 million in July 1992. Loan 2869-JM closed on June 30, 1995 while Loan 3502-JM is due to close in FY2000 when the Loan will refinance maturing Caribbean Basin Projects Financing Authority (CARIFA) bonds in a single "bullet" payment. However, the activities encompassed by the latter project have been completed and can be evaluated.

This report is based on the Implementation Completion Report (ICR) for the Fourth Power Project prepared by the Latin America and Caribbean Region, issued on May 31, 1996, the Staff Appraisal Reports (SAR), loan documents, project files, and on discussions with Bank, International Finance Corporation (IFC) and Inter-American Development Bank (IDB) staff. An Operations Evaluation Department (OED) mission visited Jamaica in February 1998 to discuss the effectiveness of the Bank's assistance with the Government and the various project implementing agencies. The cooperation and assistance of Government officials and the Jamaica Public Service Company (JPS), the National Investment Bank of Jamaica (NIBJ), Petrojam, and the Office of Utility Regulation (OUR) management and staff is gratefully acknowledged.

Because no ICR has yet been prepared for the Energy Sector Deregulation and Privatization (ESDP) Project, this report contains descriptive information on the project to facilitate understanding of the issues discussed. It also examines the broader experience of the development of power projects by the private sector in Jamaica during the 1990s.

Following standard OED procedures, this draft Performance Audit Report (PAR) was sent to the Borrower for comments. All comments received are contained in Annex C.

1. Background

1.1 Jamaica has a population of 2.5 million, growing at under 1% p.a. and a per capita GNP of about US$1,450. Real GNP per capita has grown by about 1.7% since 1985. Average annual inflation during the same period exceeded 25%. The country's main export earnings are from bauxite/alumina and tourism. Jamaica's per capita external debt burden is amongst the highest in the world and the country had very little access to commercial financing by private banks during the 1980s.

1.2 Commercial energy consumption is relatively high, because of the needs of the bauxite/alumina industry, which accounts for about half of total energy demand. Jamaica imported 22 million barrels of crude oil and refined products in 1996 at a cost of nearly US$500 million. Electricity sales by JPS to its 420,000 customers in the year to March 1997 were 2,147 Gwh. About 70 % of the population has access to electricity.

1.3 During most of the past twenty years Jamaica has suffered from poor electricity supply, both in quantity and quality. Aging, unreliable generating plant, lack of timely new investments, financial losses, unexpectedly high demand growth in the late 1980s, hurricane damage in 1988 and accidental destruction of a power plant in 1994 account for this.

1.4 The Bank has been (and still is) extensively involved in the Jamaican power sector. It made four loans totaling US$130 million between 1982 and 1995, which represented a substantial injection of resources to the sector. The most recent Loan (Ln. 3944-JM, approved in FY95) finances the reconstruction of a power plant damaged in an explosion in 1994. In 1994 Jamaica also received a GEF grant of SDR 2.8 million for a Demand Side Management Demonstration Project.

1.5 The two projects examined in this report are the Fourth Power Project (Ln. 2869-JM, US$18 million) which principally financed transmission and distribution investments for JPS, and the subsequent Energy Sector Deregulation and Privatization Project (Ln. 3502-JM, US$60 million), which financed the construction of generation plant by both the public and private sectors, with cofinancing from the Inter-American Development Bank's (IDB) Private Sector Energy Development Program (US$57.5 million). These projects cover the period 1987–95, during part of which the Jamaican economy suffered from hyperinflation and a massive depreciation of the currency, which made financial planning and tariff setting very difficult.

2. Fourth Power Project

Project Objectives and Design

2.1 The project's objectives as defined in the SAR were quite general. It states (para. 3.09) that the project's "primary aims are to improve the system's operating efficiency and to provide additional installations to serve new customers." The objectives as described in Form 590s and the ICR, although worded somewhat differently, remain imprecise: (a) increase and improve the utilization of the existing generation system by expanding and upgrading the transmission and distribution networks; (b) prepare future power projects; and (c) strengthen JPS's managerial and engineering capabilities.

2.2 Power IV was a "traditional" Bank power transmission and distribution project with no unusual features. Hindsight shows that it should have included a generation component, but at the time the project was appraised in mid-1985, the supply/demand balance for the coming years looked satisfactory. Demand growth of 3% p.a. was projected, which seemed reasonable, given the low growth of electricity consumption during the previous decade—only 0.5% p.a. However, Loan approval was held up till mid-1987 because of disagreement between the Government of Jamaica (GOJ) and the International Monetary Fund (IMF) on macroeconomic issues. The post-appraisal in late 1986 should have been an opportunity to take a fresh look at the load forecast (because the economy began to recover from 1985 onwards), but this was not done. By the time of the first supervision mission in early 1988 and even before the damage from Hurricane Gilbert (see below), the need for additional generation capacity in 1990–91 was apparent and was recorded in the supervision report. However, no measures to restructure the project towards the financing of additional generation capacity (including possibly the submission of a supplemental loan if needed) were proposed.[1]

Implementation

2.3 The project was implemented during 1988–95, taking two years longer than planned at appraisal, mainly because of the disruptive effect of Hurricane Gilbert, which struck Jamaica in late 1988. US$4 million of the Loan was reallocated to repair hurricane damage.[2] Consequently, work on the original scope of the project did not begin till 1990, after the emergency reconstruction program had been completed.

2.4 The pace of implementation was slow, partly due to JPS's cumbersome contract award procedures[3] and GOJ restrictions on JPS's capital expenditure program (JPS's cash surpluses were used to cancel out deficits of other state-owned enterprises (SOEs), as a way to achieve public finance targets agreed with the IMF).

1. In its comments JPS implies that this would have taken too long.

2. Reconstruction of the power system took about a year and the cost exceeded US$50 million. At the same time JPS suffered a 20% drop in sales due to its inability to serve customers.

3. Acknowledged by JPS in its own contribution to the ICR (p.29, para 36)

2.5 By 1990 power shortages had reappeared, even though the appraisal team had not expected that new generation plant would be required before 1993. The team forecast a peak demand for 1993 of 300 MW, but the actual peak turned out to be 380 MW, nearly 30% higher. The lack of sufficient generation capacity in the first half of the 1990s became *the* major sectoral issue and much effort by JPS, GOJ and the Bank was devoted to finding a solution to this. The time and attention given to implementation of Power IV understandably suffered as a result.

2.6 Institutional strengthening of JPS under the project was minor. Even though one of the project's objectives was to strengthen JPS's managerial and engineering capabilities, only 140 staff-months of training activities took place, at a cost of US$0.7 million (less than half the appraisal estimate). This was during a period in which JPS was short of skilled staff. The main issue facing the utility's institutional strengthening during the project was uncompetitive remuneration, which deteriorated further during the early years of implementation, before being addressed by GOJ (see below). Training was given little coverage in Bank supervision reports, reflecting the preoccupation with the physical components of the project.

Key Issues

Staffing and salaries

2.7 During the late 1980s, JPS lost skilled staff because of its inadequate salaries. By 1989 Bank supervision missions were seriously concerned about the level of vacancies, and by JPS's inability to recruit replacements. Expatriate distribution engineers had to be hired under the project to assist with the design work for project implementation. However, the salary problem had been discussed at negotiations in 1987, when GOJ had agreed to align JPS's salary scale with those of equivalent corporations by 1989. This was not implemented till 1991. Following a further round of salary increases in early 1992, JPS's competitivity in the labor market seems to have been restored.

Loss reduction

2.8 JPS's overall energy losses in the mid-1980s were in the range of 18-21% of net generation, of which over 8% was estimated to be non-technical losses. As part of the efficiency improvement targets agreed under the project, JPS committed itself to reducing losses to 15% by 1991/92. The project's distribution component was designed to help bring down technical losses through upgrading primary distribution lines and installing capacitors. The ICR indicates that the physical targets for these were exceeded. Despite this, no reductions in overall losses from the 18-21% range were achieved during the project implementation period (Annex B, Table 3). This implies that the level of non-technical losses (illegal connections, etc) must actually have increased. Bank supervision missions did not appear to give loss reduction a high priority till the final two years of the project. However, since 1995/96 there has been some improvement, and losses are now averaging 17%.

Electricity Pricing

2.9 Throughout the past fifteen years GOJ's approach to electricity pricing has involved delayed, but substantial tariff increases followed by long price freezes. For example, two very large increases in 1984 were followed by electricity tariffs that remained unchanged until 1990.

Consequently, the average tariff fell from about 13US¢/kWh to 8US¢/kWh, necessitating big increases in 1990 and 1991. The declining tariff in real terms meant that JPS rarely met the rate of return on assets target covenanted under the Bank's loans (Annex B, Table 3). Between 1988–96 JPS had a negative net income in four out of eight years.

2.10 At the time of the tariff increases in 1990–91, JPS also introduced fuel and foreign exchange adjustment clauses. The Jamaican dollar slumped from 8.5 to 24 per US dollar during 1991, with a huge impact on JPS's finances because of the sharply increased burden of foreign debt service and oil imports. These structural changes to tariff policy were a significant improvement in protecting JPS's finances from exogenous macroeconomic changes. Since then JPS has been able to *partly* pass on to its customers the impact of currency fluctuations. Given that the price JPS pays to IPPs for power purchases is *fully* indexed to international oil price variations and exchange rate fluctuations, these tariff adjustment clauses did not protect JPS adequately from exogenous cost increases. GOJ has recently agreed to allow JPS to *fully* recover the effect of exchange rate movements through consumer tariff adjustments.

2.11 However, since 1991, GOJ did not authorize JPS to increase the overall level of its rates despite requests to do so in 1994 and 1995. Bank efforts to enforce covenant compliance during this period were ineffectual because the JPS components of the subsequent ESDP project were already completed. JPS's customers actually benefited from a reduction in rates in 1996 that resulted from an appreciation of the Jamaican dollar. Nevertheless, the average tariff in 1997 was about US¢12.3/kWh, only slightly below a recent LRMC estimate of US¢12.6/kWh. Given this, GOJ's reluctance to authorize further increases is not surprising.

Overall Project Assessment

2.12 The overall project outcome is rated as marginally unsatisfactory (compared to "satisfactory" in the ICR) because although the physical investments were completed satisfactorily (albeit late), there was no discernible improvement in system operating efficiency, which was the primary goal of the project. The average system heat rate (a measure of generation efficiency) deteriorated over the project period while Transmission and Distribution losses remained unacceptably high (see Annex B, Table 3). JPS's financial performance was unsatisfactory, with a negative net income in four of the eight years covered by the project. The covenanted rate of return on assets was met only twice. From the consumer's point of view, during most of the project period the power supply was inadequate.

2.13 While the ICR considers the institutional development impact of the project to have been partial, this Audit assesses the impact to have been negligible. Both the ICR and this Audit are of the view that the sustainability of the physical investments is likely (although there is some degree of uncertainty in the long-term financial sustainability of JPS). Bank and Borrower (JPS) performance are rated as unsatisfactory by the Audit because the project should have been restructured to address the most pressing issue facing the sector—power supply shortages, and because the Borrower rarely achieved the agreed operational and financial performance targets. In contrast, the ICR considers Bank and Borrower performance to have been fully satisfactory.

3. Energy Sector Deregulation and Privatization (ESDP) Project

Project Objectives

3.1 The objectives of the project as stated in the SAR were to:

(a) provide urgently needed power generation capacity;
(b) establish the enabling environment for attracting private investments in the power sector including the legal and regulatory framework; and
(c) support GOJ's deregulation and privatization program in the energy sector.

3.2 These objectives were highly relevant to the problems facing the Jamaican energy sector at the beginning of the 1990s. Although it was not explicitly stated in the loan agreement,[4] Bank staff who designed and appraised the project in 1991–92 probably expected the privatization of two major sector entities, JPS (the electric power utility) and Petrojam (the oil refinery) to occur by the end of the project.[5]

Summary description of project components:

3.3 The project provided funds for: (a) construction of power generation plants and associate transmission lines by both the public and private sectors; (b) assistance in developing a contractual framework for "build-own and operate" (BOO) projects and a regulatory framework for the power sector; and (c) development and implementation of a privatization strategy for JPS and Petrojam in line with a timetable that would emerge from a sectoral study to be carried out as part of the project. Neither the SAR nor the loan agreement clearly state if the latter meant that these SOEs should be privatized by the end of the project (see above).

3.4 A Private Sector Energy Fund (merely a financial window) was set up at NIBJ to provide long-term financing for one private power generation project. It was jointly financed by the Bank and IDB, each of whom provided it with US$40.5 million for on-lending to the IPP who was to be selected through a competitive bidding procedure.

Project Design and Quality at Entry

3.5 This multifaceted project, although complex and ambitious, was well designed. It had an appropriate mix of hardware and software components. If implemented in its entirety, it had the potential to bring profound and far-reaching changes to the Jamaican energy sector. The contrast with its predecessor project is striking.

3.6 The Bank showed receptivity to the client in agreeing at an advanced stage of project processing to include an entirely public-sector power plant in the scope of the project, despite an earlier agreement that no new generation plant would be built by JPS. This change was

4. The loan agreement required, somewhat ambiguously, the preparation of a privatization strategy as well as an implementation plan acceptable to the Bank, and stated that the strategy should be implemented as agreed with the Bank.

5. The FEPS was less ambitious and spoke of the privatization of JPS occurring "beyond the scope of this Project."

necessitated by the urgency of commissioning new generation plant, given the power shortages prevailing at that time. Later experience with the long time required to complete the first IPP in Jamaica (para. 3.16), shows that this was a correct decision.

3.7 Given that the Bank's procurement guidelines are primarily designed to address issues in public sector projects (and at that time did not address private sector procurement) it was difficult for the Bank to finance private development of infrastructure projects. The design of this project incorporated a useful innovation in Bank procurement practice aimed at easing these constraints. Proposals from competitively pre-selected project developers were evaluated on the basis of the price of electricity offered, which indirectly considered their ability to mobilize financing and its comparative cost. The Bank's Legal and Procurement Departments had objected to this approach because it conflicted with the Bank's procurement guidelines, which require that evaluation should be on a cash basis only. The Region obtained their concurrence by seeking a specific exemption from the guidelines as a test case at the time of Board approval. This flexibility in interpreting the Procurement Guidelines proved its worth and has since been incorporated in the most recent procurement guidelines.[6]

3.8 Since the project sought to maximize financing of sector investments by the private sector, considering ability to mobilize funds while prequalifying firms was critically important. Selection on the basis of the final price of electricity ensured that developers had a strong incentive to seek the lowest-cost equipment and also ensured that Jamaica obtained the best price for electricity, although it did not ensure maximum private funding.

Project Implementation and Achievement of Objectives

JPS Component

3.9 A 33 MW combustion turbine plant was procured by JPS for US$23 million and installed at Hunts Bay on a turn-key basis in under one year. This helped avert power shortages in the important winter 1993 tourist season. Compared to the slow pace of implementation under Power IV, JPS executed this component with rapidity and achieved the desired outcome of avoiding power cuts. At the time the Bank agreed to include this component for implementation by JPS, GOJ gave the Bank an undertaking that the plant would be turned over to the private sector for operations. Subsequently, the decision to attempt the privatization the whole of JPS (as a single entity) overtook this agreed (piecemeal) approach and no action was taken to find a private operator for the plant. The JPS privatization process was later aborted (see para. 3.22).

Rockfort private power plant

3.10 This was built by an independent private power producer (IPP), Jamaica Private Power Company (JPPC), the project company established by the winning consortium of developers selected under the project to build, own and operate a 60MW slow-speed diesel power plant. JPPC signed a 20-year power purchase agreement (PPA) with JPS at an average discounted price of US¢6.9/kWh, which is fully indexed to any changes in the US dollar/Jamaican dollar parity. JPS is committed to paying a monthly capacity charge, but does not have to take a minimum quantity of energy.

6. Paras 3.13 and 3.14 of the Guidelines for Procurement under IBRD loans, dated 1/95, revised 9/97.

3.11 The plant suffered a commissioning delay, unsatisfactory performance by the contractors and operational problems with some of the equipment in the early stages. Although the first unit started production in November 1996, about 4 months behind schedule, the final performance tests were not completed till January 1998, when it was confirmed that the plant had a reliable firm capacity of 61MW.

Financing structure[7]

3.12 The plant was financed through 30% equity and 70% debt. Details are given in the Graphic and Tables contained in Annex B. It was originally envisaged that during construction the selected IPP would draw on Bank/IDB resources via the Energy Fund (para. 3.4). However, JPPC mobilized all the necessary resources by tapping lower-cost "936"[8] funds (6.2%, fixed rate) available for projects in the Caribbean under the auspices of CARIFA, and from the Commonwealth Development Corporation (CDC). JPPC drew on the CARIFA 936 bonds for the initial five years of the project (1994–99) and will call upon the higher-cost,[9] but longer maturity Energy Fund resources to retire these bonds upon maturity in October, 1999. The repayment of these bonds by JPPC was guaranteed by letters of credit issued by a consortium of AAA and AA-rated private commercial banks.

3.13 This financial arrangement was proposed by the project sponsors and had not been envisaged by the Bank/GOJ when the project was appraised, because at that stage the international financial community was perceived as unwilling to accept such exposure in Jamaica. But since this gave Jamaica access to cheaper financing for the initial five years of the project, the Bank readily agreed to support this modification of the financing plan. In order to obtain the letter of credit (LOC) guarantees for the CARIFA bonds from the commercial banks, the legal agreements between the Bank/IDB and Jamaica had to be amended to provide an irrevocable commitment by the lenders not to suspend or cancel the amount of their Loans allocated for plant construction. The two multilateral Banks agreed to waive their rights to suspend or cancel these funds for up to five years, irrespective of the status of Jamaica's debt service payments on its outstanding loans. For this additional risk the Bank charges Jamaica an additional 0.25% per year on the outstanding amount of the commitment during its five-year life.

3.14 According to the Board Paper[10] seeking approval for this amendment to the original terms of the Bank Loan, "the take out financing for the "936" bonds was an exceptional transaction for the Bank. It was in response to an operational need under special circumstances and did not represent a new financial instrument offered by the Bank." This was inserted in the Board paper at the request of the Director of the Risk Management and Financial Policy Department (FRS)[11] to counter any possible perception that a new financial product was being proposed without appropriate consultation. More recently, however, RMC has been working towards a proposal to mainstream this type of alternative lending arrangement.

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7. This information and analysis in the ensuing paragraphs is drawn extensively from "Financing Jamaica's Rockfort IPP—A review of experience for future projects" by Basil Sutherland, NIBJ, February, 1998. World Bank Resource Mobilization and Cofinancing Discussion Paper Series, No. 121.

8. "936" refers to a section in the U.S. Internal Revenue code which provided tax exemptions on the earnings of U.S. corporations in Puerto Rico, provided these earnings were invested in certain Caribbean Basin countries.

9. The agreed on-lending rate for the Energy Fund is the 30-year US Treasury Bond rate plus a 3% premium. The Fund loan is denominated in US$ but the debt servicing by JPPC will be in J$.

10. R94-166 of August 8, 1994.

11. Email from M. Nishimuzu, FRSDR to K. Challa, Chief LA3TF, July 20, 1994.

Overall assessment of the Rockfort IPP

3.15 *Strengths:*

The developer selection process was conducted well. It was competitive, fair and transparent;

- GOJ/JPS borrowing was reduced by the extent of the developer's equity contribution to the project. Given the perceived country risks for foreign private investors, the project was an important precedent in establishing Jamaica's credibility and striking a path for other private developers to follow.
- The project tapped US$81 million of CARIFA 936 funds for five years, which cost less than LIBOR or IBRD loans.
- The risks of completion delays and unsatisfactory equipment performance were passed on by JPS to the IPP: both events did occur and JPS was compensated for the lack of contracted firm capacity by JPPC.
- Experience and skills were gained by the Jamaican team in structuring the financing of such deals and negotiating with other IPPs.
- The Bank showed originality and unusual flexibility in adapting its own procedures to fit the requirements of the project.

3.16 *Shortcomings:*

- The financing arrangements for the project were over-complex, leading to delays and increased costs, particularly legal fees (see Annex B, Table 2). Nearly 350 different legal documents had to be negotiated and signed at financial closure.
- The project took over three years to come to financial closure from the time of prequalification of developers (of which 22 months elapsed from the selection of the winning developer). This was much slower than if it had been a 100% public-sector project involving only JPS and multilateral lenders. Such a lengthy period imposed a significant economic cost to the economy because electric power was in short supply.
- The project had high transaction (non-plant) costs, particularly financial and legal charges that drove up the cost of power produced by the plant (Annex B, Table 2). It was also very demanding of GOJ and Bank time and effort to bring the project to closure (para. 5.1).
- Financial risk sharing between all the parties was uneven. The Letter of Credit banks[12] that guaranteed the repayment of the CARIFA bonds by JPPC are fully protected against commercial and political risks, through the World Bank/IDB irrevocable commitment to disburse. The risks fall disproportionately on GOJ and to a lesser extent on the developer's equity because the LOC banks were unwilling

12. CARIFA rules require the project to have at least an AA credit rating or to have an equivalent guarantor. Since JPPC did not have such a rating, the LOC banks acted as guarantor in exchange for certain security guarantees.

to shoulder construction and commercial risks.[13] Fortunately, the minimal risk exposure obtained by the LOC banks via the irrevocable disbursement commitment from the multilateral banks led to a reduction in the fees they normally charge for providing such repayment guarantees.

- GOJ could not avoid giving a sovereign guarantee of JPS's obligations to JPPC (and the two other IPPs) under the PPA and a guarantee of full convertibility to eliminate the currency risk.

3.17 In conclusion, the Rockfort component of the ESDP project failed to meet the narrowly-stated objective of providing *"urgently needed"* power generation capacity because of the extremely lengthy financial closure process. At the time of appraisal, it had been scheduled to enter service in early 1995. Had it done so, the load shedding made necessary by the explosion at the Old Harbour plant in mid-1994 would have been less severe. Nevertheless, in broader terms, the project was successful and the operational sustainability of plant is assured. It will remain an important source of power for Jamaica for many years to come.

3.18 Combining public and private funds in a single operation increased the legal complexities exponentially. Although this improved the financing terms, finalizing the "mixed" funding drove up the capital costs and took much longer to put in place. For these reasons, the structure of this project is not a model to be followed.[14] It is better to keep the financial arrangements simple, as later IPPs have shown. For example, the JEP project, which did not include any public funding, came to financial closure in nine months following receipt of proposals. The negotiating process was probably aided by the experience gained from the Rockfort project, which had started earlier.[15]

Sector Regulation

3.19 The project was instrumental in the design and preparation of the regulatory framework for the power sector. A study funded under the project recommended the establishment of an independent regulatory authority and GOJ agreed to set up an Office of Utility Regulation (OUR). The project assisted in determining the regulatory principles to be applied to the sector, with the drafting of detailed regulations. It also gave substantial institutional support to (and financed) staff training in the early days of OUR operations.

3.20 Unfortunately, the 1995 OUR Act has important deficiencies arising from Ministerial reluctance to delegate major regulatory powers to the new body. The OUR lacks the authority to regulate utility companies which predate the Act and does not have the power to issue enforceable directives to the utilities it does regulate. The existing legislation governing the operations of the public utilities should be amended to reflect the new role given to OUR. These legal weaknesses have still to be rectified. The necessary modifications to the OUR Act have been identified and are being considered by Cabinet with a view to enacting the amendments to

13. In similar projects in the U.S., these banks would have accepted the construction risk. However, in Jamaica they were unwilling to do so because they felt it was impossible to separate it from country risk and it proved impossible to obtain political insurance coverage for the full five-year period of the CARIFA bonds.

14. The Region pointed out that this experience helped the Bank in its decision to promote guarantees instead of take-out options as better way of enhancing "comfort" to private investors.

15. In addition, it may have been facilitated by the lower construction risk due to the fact that the plant is barge mounted and not land-based.

the legislation during 1998. The funding arrangements to ensure OUR's autonomy are also to be formalized in the near future. Currently OUR's operating costs are being met from the national budget, but from next fiscal year OUR will probably rely on license fees to be paid by the electricity, water and telecommunication utilities.

3.21 In conclusion, an important start to establishing a satisfactory regulatory framework was made under the project and significant institutional development was made in setting up and making OUR operational. But it is too early to judge whether the OUR will develop into an effective institution. It has been in operation for under two years during which it has been handicapped by an unclear mandate. In addition, GOJ's decision not to privatize JPS (para. 3.26), and the new role given to NIBJ in supervising JPS through a performance contract, have in practice diminished OUR's ability to play a substantive role in the power sector in the near-term.[16]

JPS privatization

3.22 Bank-financed consultants recommended splitting JPS into a generation company and a transmission and distribution company as a prelude to its privatization. An internal separation of functions along these line was put in place in JPS from October 1993. However, in early 1995, just before issuing the prequalification notice for the sale of JPS, the Government changed the approach to privatization and decided to offer JPS for sale as an integrated utility. The main argument to justify the strategy reversal was the belief that GOJ would get a better price by selling JPS as a single entity. Apparently GOJ's soundings in the US utility industry had indicated a willing to pay more and a general preference for acquisition of an integrated company. Given the relatively small size of the Jamaican power system, there was some validity to this argument, *if* maximizing the financial returns from the sale was GOJ's primary objective. Indeed, this was probably the main driving force behind the attempt to privatize, rather than the efficiency gains that the Bank saw as the primary objective of privatization.[17]

3.23 The Bank and IDB senior management jointly wrote to GOJ urging that the original approach as agreed between the three parties be retained. This did not happen, despite the Loan covenant (section 3.10) requiring the Borrower to implement "such (privatization) strategy and plan as approved by the Bank." The Banks' view was that separate divestiture of generation and transmission and distribution would lead to the least cost of power to consumers and the highest levels of efficiency in the long-term. These benefits were felt to outweigh the short-term gain of higher sale price for JPS as a single company. At this time the Bank pointed out the difficulty of carrying out effective regulation of an integrated utility lacking fully transparent internal cost centers.

3.24 The privatization process was launched in July 1995, with the intention of completing the sale within 12 months. It is now apparent that the offer for sale was issued too soon, given the incomplete condition of the regulatory framework. The principles governing the regulation of the power sector had not been spelled out in detail when bids were sought. Nor was OUR operational. The consequent regulatory uncertainty probably lessened the degree of interest from

16. NIBJ argues that there has been close coordination between OUR and NIBJ so far.

17. NIBJ in its comments (Annex C) questions this interpretation.

the private sector and lowered the bid prices.[18] The Bank's September 1995 Supervision Mission aide-memoire urged GOJ "to ensure that the regulatory regime for the sector is made known to the prequalified bidders well before receipt of the proposals." But this was impossible, given that the RFP was issued in October 1995.

3.25 Compared to the number of bidders interested in setting up IPPs in 1993–94, there was less interest in acquiring 51% of the shares of JPS. Five firms were prequalified but only two formal bids were received in January 1996. Pressure to have the sale finalized before the election campaign may also have contributed to the decision to go ahead.

3.26 GOJ's evaluation of the bids and decision-making process took about ten months. This was too long, and it allowed the issue to become politicized, as both bidders were supported by local lobbies seeking to influence the outcome. In the end GOJ concluded that both offers[19] were too low: it is worth noting that both bidders proposed immediate tariff increases. This was a main reason for the decision to reject both offers.[20] In view of the serious concerns about the extent to which efficiency gains would be passed on to consumers by a privately-owned integrated JPS, and the impossibility for GOJ to obtain its desired financial returns from the asset sale, it was probably wise not to proceed on the terms offered by the bidders.

3.27 However, as the key information on the offer price and the tariff increases proposed by the bidders was available as soon as the bids were received, GOJ could have decided to abort earlier. This would have depoliticized the process and would have had a less negative impact on the international credibility of GOJ's privatization program.

3.28 Following GOJ's decision not to privatize JPS, the Minister of Finance, in an explanatory letter[21] to the Bank, stated that "the critical criterion must be that a genuine effort should be made to bring an entity to the *point of sale*, as opposed to giving an ironclad commitment to sell, regardless of the inadequacy of the offers received."

3.29 Since then JPS appears to have recovered from the negative effects of prolonged uncertainty about its future and senior management seems motivated to show that efficiency gains can be achieved without privatization. GOJ decided that JPS should "operate efficiently as a virtual private sector company" at "arm's length" from the Government. JPS was instructed to prepare a corporate business plan and become an "efficient and cost competitive organization."[22] The 1997–2006 Corporate Business Plan for JPS was subsequently approved by Cabinet, and NIBJ was assigned responsibility for quarterly monitoring under a three-year Performance Contract with JPS.

3.30 Since achievements and targets under the JPS Business Plan and Performance Contract with NIBJ were not provided to the audit Mission, the audit cannot assess the realism of JPS's

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18. NIBJ feels that inadequate time for bid preparation rather than regulatory uncertainty accounts for the low number of bids received.

19. US$111 million and US$160 million.

20. The Prime Minister's statement to Parliament announcing the decision on 22 October 1996 also stated that the proposals were inadequate because of "an unacceptable dividend policy" (without elaborating) and because of "the unwillingness to guarantee JPS payment obligations to the IPPs." However, under the existing legal agreements with the IPPs , GOJ was already committed to underwriting JPS's obligations even after privatization.

21. Dated 5 November 1996. The Bank's response of 12 December notes "deep disappointment" at the outcome.

22. All quotes taken from the PM's statement to Parliament.

proposals to improve efficiency and cut costs and make a judgment as to whether the new arrangements represent a real break from the past.

Petroleum product market deregulation

3.31 Before this project, potential importers of petroleum products faced duties of over 40% while Petrojam was exempt. Consequently, the latter enjoyed a de facto monopoly on such imports. The operations of the Petrojam Refinery were examined by international consultants recruited under the ESDP project. They found its economic viability to be marginal and concluded that it required only a small (10%) margin of protection to compete with imports of refined products. In mid-1993, GOJ introduced a new tariff structure that greatly reduced the barriers to product imports by the private sector by retaining only a *theoretical* 10% margin of protection[23] for Petrojam's crude oil imports. This reform, which was part of the conditions for the Private Sector Development Adjustment Loan (Ln. 3622-JM), was very successful and the private sector now accounts for over a quarter of product imports (over 3 million barrels), while the consumer has gained through lower prices and better service at the retail level brought about by greater competition. But in reality GOJ has not given Petrojam any protection because a loophole permits petroleum products sourced from within the Caribbean Economic Community (CARICOM) to be duty exempt while crude oil is subject to a 5% import tariff. In fact large volumes of products from the Trinidad refinery now enter Jamaica free of duty. The Audit Mission was unable to obtain an explanation for this anomaly. The same tariff rate should be applied to both crude oil and products to ensure a level playing field. Since pump prices in Jamaica are low by international standards, there is scope for GOJ to increase excise duties on all petroleum imports.

Petrojam Privatization

3.32 The project was designed to lay the groundwork for the privatization of the Petrojam refinery by supporting the preparatory analysis of the available options for the future of oil refining in Jamaica. After the Bank-financed consultant study was completed, it should have been apparent to all sides that there would be low interest in acquiring Petrojam. The refinery is a small, 36,000 b/d hydroskimmer built in the 1960s. Such refineries are increasingly uncompetitive and are generally being phased out worldwide or enlarged and upgraded by the addition of catalytic cracking facilities. However, such upgrading entails heavy new investment (well over US$100 million), which few IOCs were prepared to commit to Jamaica, given the availability of adequate refining capacity in the Caribbean/US Gulf Coast region. Industry soundings would have indicated this and the Bank's technical staff were well aware of this obstacle.

3.33 The Audit Mission was informed by one of the IOCs operating in Jamaica that they had looked into the possibility of acquiring the refinery in the early 1990s and had concluded that it was not a viable long-term business proposition without major investments in a catalytic cracker, which they were unwilling to undertake. Any potential buyer would have wanted a monopoly on imports or significant tariff protection, both of which were contrary to the GOJ policy of sector deregulation. Nor was GOJ ready to consider allowing the refinery to be closed down and its

23. Crude oil is subject to a 5% tariff while products are levied at 15%

storage and terminal used simply to import refined products, even though the refinery supplied only about a third of Jamaica's total petroleum product needs.[24]

3.34 Given this unpropitious context, the privatization process was carried out by GOJ largely to live up to the commitment to the Bank to do so and also to unblock the second tranche of the Private Sector Development Adjustment Loan (Ln. 3622-JM) in mid-1995. This Loan explicitly required Petrojam to be "brought to the point of sale."

3.35 The outcome was unsurprising; only one single bid was received. It came from the Petrojam management team who offered a very low price and expected GOJ to agree to the unacceptable security conditions sought by their financiers. After prolonged negotiations during 1995–96 with two sets of financiers, GOJ and the management buy-out (MBO) team were unable to agree on the transaction. However, GOJ was unwilling to explicitly abandon the process during 1997,[25] even though there was no progress in coming to closure.

3.36 *Current position.* GOJ has let the "privatization" process drag on too long, with damage to Petrojam from uncertainty about its future. This has prevented it from focusing on long-term planning or investing, and there has been a negative effect on staff morale. In addition there has been an adverse impact on the other (private) importers and distributors who need to know the sector's long-term structure and outlook to make their own investment decisions. If the uncertainty continues, there could even be a risk of unnecessary duplication of investment in import and storage facilities as IOCs, responding to robust demand growth, decide to build their own facilities in the absence of a clear indication on the future of Petrojam.

3.37 GOJ needs to decide its policy towards Petrojam. It would be timely to revisit the issue of refinery closure and to cost out the potential savings to the economy of doing so, given the changes since this was last studied in the early 1990s. Just as GOJ did for JPS, it needs to provide a clear indication of the type of arrangements under which it wants Petrojam to operate, at least for the medium term. It could then prepare a corporate business plan, and consider measures to enhance its efficiency.

3.38 On balance, since the narrowly defined aim of the Project was to carry out the preparatory work before the sale process, one cannot say that the project failed to meet this objective, despite the fact that Petrojam remains in the public sector. Its privatization was not a relevant objective to seek, given the structural issues facing the petroleum refining and distribution sector. Both GOJ and the Bank may have been preoccupied with privatization to the exclusion of other potentially more fruitful options such as refinery closure and the retention of Petrojam's import, handling and storage facilities to serve as a "common carrier" for all importers.[26]

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24. By 1996 only 23% of Jamaica's petroleum product consumption of 22 million barrels came from the refinery, which has generally operated at only about 50% of its rated capacity in recent years.

25. Probably due to the priority of the national elections.

26. The Region stated that this should be operated by the private sector.

Related Sectoral Issues

Jamaica's Experience with other IPPs

3.39 Old Harbour (JEP) Medium-speed Diesel Project. In late 1993, JPS was faced with rapid demand growth, poor performance of its existing power plants and delays in negotiating the financing for the Rockfort plant. It therefore decided to solicit proposals for a second 40 MW IPP to be commissioned by mid-1995. Given the urgency, the choice of land-based or barge-mounted plant and the technology was left open to bidders, provided the plant could operate on fuel oil. Bidders were expected to invest a minimum of 20% equity and to arrange financing for the remainder. Four proposals were received in February 1994, (compared to two for the Rockfort plant, where JPS had been much more restrictive in its technical specifications). Just eight months were required to conclude a 20-year agreement with Jamaica Energy Partners[27] for the provision of 72MW[28] of barge-mounted, medium-speed diesel generating capacity by September 1995. The total project cost was about US$96 million. The cost of funds (LIBOR plus 4%) was significantly higher than for the Rockfort plant, and this is reflected in the average discounted price of about US¢7.5/kWh. The initial developers later refinanced the debt by bringing in new investors, including IFC.

3.40 The project, which came to closure almost simultaneously with Rockfort, showed a higher willingness on the part of some foreign investors to accept risks in investing in Jamaica's power sector than a few months earlier when financial closure of the Rockfort plant was delayed by the extreme caution of the LOC banks. In this instance, the developers took all the construction risks[29] and ultimately paid damages to JPS for a small completion delay.

3.41 The plant went into service a year after financial closure, almost on schedule, ending a long period of power supply constraints in Jamaica. It is most unlikely that GOJ/JPS could have arranged public-sector financing and executed the project as rapidly as JEP. Given the power shortages of that period, this is a major positive gain from the decision to confer responsibility for new generation projects on the private sector. The plant has operated satisfactorily since startup, albeit at a somewhat lower-than-planned capacity factor due to the commissioning of the Rockfort plant.

3.42 As with Rockfort, JPS is committed to paying JEP capacity charges only and is compensated for shortfalls in dependable capacity. However, currency exchange risks are entirely borne by JPS. The payments due to JEP are indexed to changes in LIBOR and international oil prices. In both projects GOJ guarantees unrestricted access to foreign exchange and JPS's payment obligations to the IPPs, even in the event of JPS's privatization.

3.43 *Bogue Emergency Gas Turbine Project.* To cope with the load shedding made necessary by the sudden loss of 123 MW (22%) of generating capacity in mid-1994 because of an explosion, JPS arranged for 43MW of barge-mounted, emergency gas turbine capacity for three years. Because of the urgency, JPS did not advertise for proposals to be selected competitively. Instead it shortlisted four parties from over thirty who had submitted unsolicited proposals after

27. Which had a generation plant manufacturer, Wartsila, as its principal initial shareholder.

28. The size of the plant was increased in the wake of the June 1994 explosion at JPS's Old Harbour plant.

29. Compared to a land-based plant, this project had a much lower degree of construction risk because the barge can be moved elsewhere.

the explosion. The total project cost quoted by the selected developer was about US$29 million and the corresponding average discounted price of power works out at about US¢11.7/kWh (incl. fuel), which is not excessive given the emergency nature of the project. The contractual arrangements were structured differently to the other projects; JPS supplies fuel to the plant at its own expense, while the developer guarantees a low heat rate[30] and dependable capacity. JPS was given the option to renew the three-year contract or to buy the plant at expiration, but decided to do neither, given its present generation surplus and its cash flow constraints. The plant went out of service at the end of 1997, having played a very useful part in normalizing the power supply during 1995–96.

3.44 The experience with this contract was very positive. First, it is highly unlikely that JPS could have arranged the financing and procured the plant under such a tight schedule. Second, equipment performance risks were borne by the IPP and so a very high level of plant availability was maintained. Third, the flexibility of the contract with the option to renew, terminate or buy the plant gave JPS time to evaluate its longer-term options rather than commit itself to a substantial capital investment in haste.

Power Planning

3.45 The current generation reserve margin of about 38%[31] is reasonable by historical standards for a relatively small island system, but is eroding fast, because of the 7% p.a. demand growth. JPS is trying to keep the availability of its old units above 90%, but their reliability is not assured. The Least-Cost Generation Expansion Program is currently being updated and is likely to conclude that a new generation plant will be needed as early as 2001. The planning process includes an analysis of coal as a potential fuel for power generation, but coal is handicapped by the need to factor in major initial investments needed in ancillary facilities like an import terminal (although the latter could potentially serve a much bigger coal market than just power generation).

3.46 JPS is planning to defer the retirement of Units 1 & 2 of the Old Harbour plant and is also interested in exploring "repowering" of old units due for retirement as an alternative to new plants. However, the feasibility studies necessary to demonstrate the technical and financial viability of doing so have not yet begun. In a country with a scarcity of sites suitable for greenfield power projects, repowering has the advantage of not requiring new land. But even if repowering should prove to be an attractive option, carrying it out requires old plant to be shut during the refitting. This can only happen when a new generation plant is already in service. Two cogeneration projects with a combined capacity of 23 MW are due on stream in 1998–99, but they can only provide part of the necessary 60+ MW of new capacity that will required by 2001–02.

3.47 The generation system expansion that took place in the 1990s was sub-optimal because it was driven by pressing circumstances rather than based on a long-term least-cost sequence. JPS had to rapidly install 30MW of gas turbine capacity in 1993, to alleviate power shortages that arose because longer implementation time (but lower-cost) diesel capacity had not been planned early enough. The current reserve margin gives JPS a brief opportunity to decide on the next plant after a thorough review of the available options. But to avoid history repeating itself in one

30. At 9960 BTUs/kWh this was by far the most efficient gas turbine on JPS's system.

31. In early 1998, the system peak was about 467MW out of a reliable firm capacity of 645MW.

decade, solicitation for the next (diesel) IPP should begin before the end of 1998. Selection of the developer and financial closure by mid-1999 would enable the new capacity to be in service by 2001. In an island economy with no possibility of interconnection it is prudent to maintain a higher reserve margin than elsewhere. Jamaica's mixed track record in load forecasting, timely power investment planning and project execution strongly underlines the need for more generation capacity in the medium-term.

Bank and Borrower Performance

3.48 *Bank Performance.* This Audit concludes that Bank performance was satisfactory, despite some shortcomings. The Bank devoted significantly more staff resources to the ESDP project than is customary: 257 weeks of staff time were required to bring the project to the Board. A further 280 SW have been devoted to supervision since then. The Bank showed a commendable degree of open-mindedness and flexibility in considering and devising solutions to the unusual features of the ESDP project (paras. 3.12-3.14). The benefits of a long period of continuity in task management were also felt.

3.49 There are widely differing views on whether the Bank played a critical catalytic role in mobilizing private investment or whether the private sector was already willing to invest in Jamaica without a multilateral Bank presence. In the pre-Board period, the Bank and IFC pursued different approaches to promoting IPPs in Jamaica. Given the perception that there was a need for only a single IPP in Jamaica at that time and that IFC was supporting an alternative unsolicited proposal, this "competition" with IFC was escalated to the highest levels of the Jamaican Government and the Bank Group's management before GOJ decided to drop its involvement with the IFC-backed alternative.[32] IFC staff to this day maintain that the pursuit of the Rockfort project to the exclusion of others cost Jamaica two years of unnecessary load shedding. This audit generally supports this assessment as the Bank's understandable preoccupation with the risk of lengthy negotiations preceding financial closure of the Rockfort plant ended up obscuring its realization that Rockfort alone was insufficient to meet growing power demand. With hindsight it is clear that other IPPs—though not necessarily the one backed by IFC at the time—should have been pursued sooner.

3.50 There is no question that the decision not to privatize JPS has had an adverse effect on the Bank's perceptions of GOJ's commitment to sector reforms and the Bank's sector policy dialogue. Yet the audit believes that the sale on the terms proposed in either bid would have been unlikely to further the sectoral reforms the Bank was seeking.

3.51 *Borrower Performance.* On balance, the Audit rates Borrower performance as unsatisfactory because there was a lack of clarity in defining the objectives sought through privatization of JPS and Petrojam, and the subsequent decisions not to proceed with these privatizations could have been handled better.[33] GOJ's approach to electricity pricing was and continues to be unsatisfactory, exacerbating JPS's financial problems, and the legislative framework for OUR to operate effectively has still to be passed by Parliament. Neither the Audit mission nor the subsequent Bank supervision mission in May 1998 were provided with the

32. This was for a larger capacity medium-speed diesel plan, which was technically unacceptable to JPS at that time. The promoter sought a "take-or-pay" contract for energy, which GOJ felt was too constraining.

33. In addition, the May 1998 Supervision Mission aide-memoire recorded that "no progress has been made to obtain serious offers from investors to acquire a stake in JPS and Petrojam..."

necessary information to assess the results targeted and achieved under the 1997–2000 JPS Performance Contract.

Overall Project Assessment and Ratings

3.52 The Audit rates the project's outcome as only marginally satisfactory because even though there is now a significant private presence in the power sector and there has been a marked improvement in the supply and quality of power to the consumer since 1996, the Rockfort IPP (para. 3.16) had numerous shortcomings and there is considerable unfinished structural reform in the power and petroleum sectors (including the unresolved issue of the refinery's long-term future). On balance, the project's overall sustainability is judged to be likely. The institutional development impact is assessed as substantial, given the creation of a sectoral regulatory framework and the experience gained by Jamaica in the intricacies of private project financing.

4. Lessons Learned

4.1 The main lessons learned from these projects are as follows:

- It is vital to be clear about the purpose of privatization of utilities at the outset because the multiplicity of possible objectives may lead to objectives which are mutually incompatible. In particular, maximizing fiscal revenues from the sale of assets may conflict with longer-term efficiency gains and consumer interests.

- Privatization is no panacea for economic activities which have no fundamental long-term future such as the operation of small, technologically obsolete oil refineries.

- Better access to private capital for investment is the primary immediate gain from IPPs. Neither GOJ nor JPS could have raised the US$120 million required for the "fast track" projects in the short time available. The positive impact was also apparent very quickly: the power shortages of 1994 were eliminated by late 1995.

- The explicit cost of power from IPPs may often be higher than that of purely public sector projects because of significant additional financial and developmental costs, higher returns on equity, and less favorable financing terms. But when capital for new investments is scarce and where rapid project execution is critical, these higher financial costs are much less than the economic cost of power shortages which are avoided.

- It is preferable to launch requests for proposals (RFPs) to solicit developer interest when the generation reserve margin is healthy, so to be able to negotiate from a position of strength rather than when power is scarce and the capacity is urgently needed. All steps should be taken to maximize competition through attracting as many bids as possible.

- Providing standardized documentation such as draft Power Purchase Agreements (PPAs) with the tender documents expedites the negotiation process. Over-detailed technical specifications should be avoided because they can have the effect of unnecessarily discouraging of bidders.

- Jamaica's experience with the two IPPs where there was no Government financial stake has shown that plant financing, construction and commissioning can be achieved significantly faster than if these had been undertaken as public or mixed-ownership sector projects. Experience elsewhere (e.g. the Philippines) has also shown that any utility faced with an unplanned shortfall in generation capacity can find a fairly rapid solution to this problem, albeit at a higher than the theoretically "optimum" production cost.

Annex A

Basic Data Sheet

JAMAICA: FOURTH POWER PROJECT (LOAN 2869-JM)

Key Project Data *(amounts in US$ million)*

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	34.6	36.1	104
Loan amount	18.0	18.0	100
Cofinancing (JPS)	16.6	18.1	109
Cancellation	-	-	-
Date physical components completed	1993	1995	-
Economic rate of return	9.8	1.4	14

Cumulative Estimated and Actual Disbursements

	FY89	*FY90*	*FY91*	*FY92*	*FY93*	*FY94*	*FY95*	*FY96*
Appraisal estimate (US$M)	5.0	12.2	14.9	16.9	18.0	18.0	18.0	18.0
Actual (US$M)	0	8.0	8.0	12.2	13.7	17.3	17.8	17.9
Actual as % of appraisal	0	66	54	72	76	96	99	99
Date of final disbursement:	September 14, 1995							

Project Dates

	Original	*Actual*
Identification/Preparation	1985	1985
Appraisal	June 1985	June 1985
Negotiations	June 1987	June 1987
Board approval	August 4, 1987	August 4, 1987
Signing	August 22, 1987	August 22, 1987
Effectiveness	March 1, 1988	December 12, 1988
Project Completion	June 1993	December 1995
Closing date	June 1993	June 1995

Annex A

Staff Inputs (staff weeks)

	Total[a]
Preappraisal	2.4
Appraisal	65.6
Negotiations	16.8
Supervision	104.7
Other	4.0
Total	193.5

a. Annual breakdown not provided in the ICR.

Mission Data

	Date (month/year)	*No. of persons*	*Staff days in field*	*Specializations represented*[a]	*Performance rating*[b]	*Rating trend*	*Types of problems*[c]
Identification/ Preparation	03/85	2	10[d]	EGR (2)			
Appraisal	06/85	2	18	EGR/FNA			
	10/85	2	5	EGR/FNA			
	09/86	2	10[d]	EGR/FNA			
Supervision	05/88	1	3[d]	DC			
	07/89	1	10	EGR	2		T/F
	09/90	2	10	EGR/FNA	2		T/F
	09/91	2	5	EGR/FNA	2		T/F
	09/92	2	10	EGR	2		T/G
	07/93	1	5	EGR			
Completion	09/95	2	5[d]	EGR/CON			

a. E=Engineer; FA=Financial Anallyst; DC=Division Chief; CON=Consultant; TS=Training Specialist.
b. 1=Problem-free or minor problems; 2=Moderate problems; 3=Major problems.
c. F=Financial; T=Technical.
d. Combined with work on other projects.

Annex A

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS			
Operation	*Loan no.*	*Amount (US$ million)*	*Board date*
Energy Sector Deregulation and privatization	3502-JM	60	7/2/1992
Generation Recovery and Improvement	3944-JM	21	9/28/1995

Annex B

Table 1. JPPC Rockfort Power Plant: Financing Plan

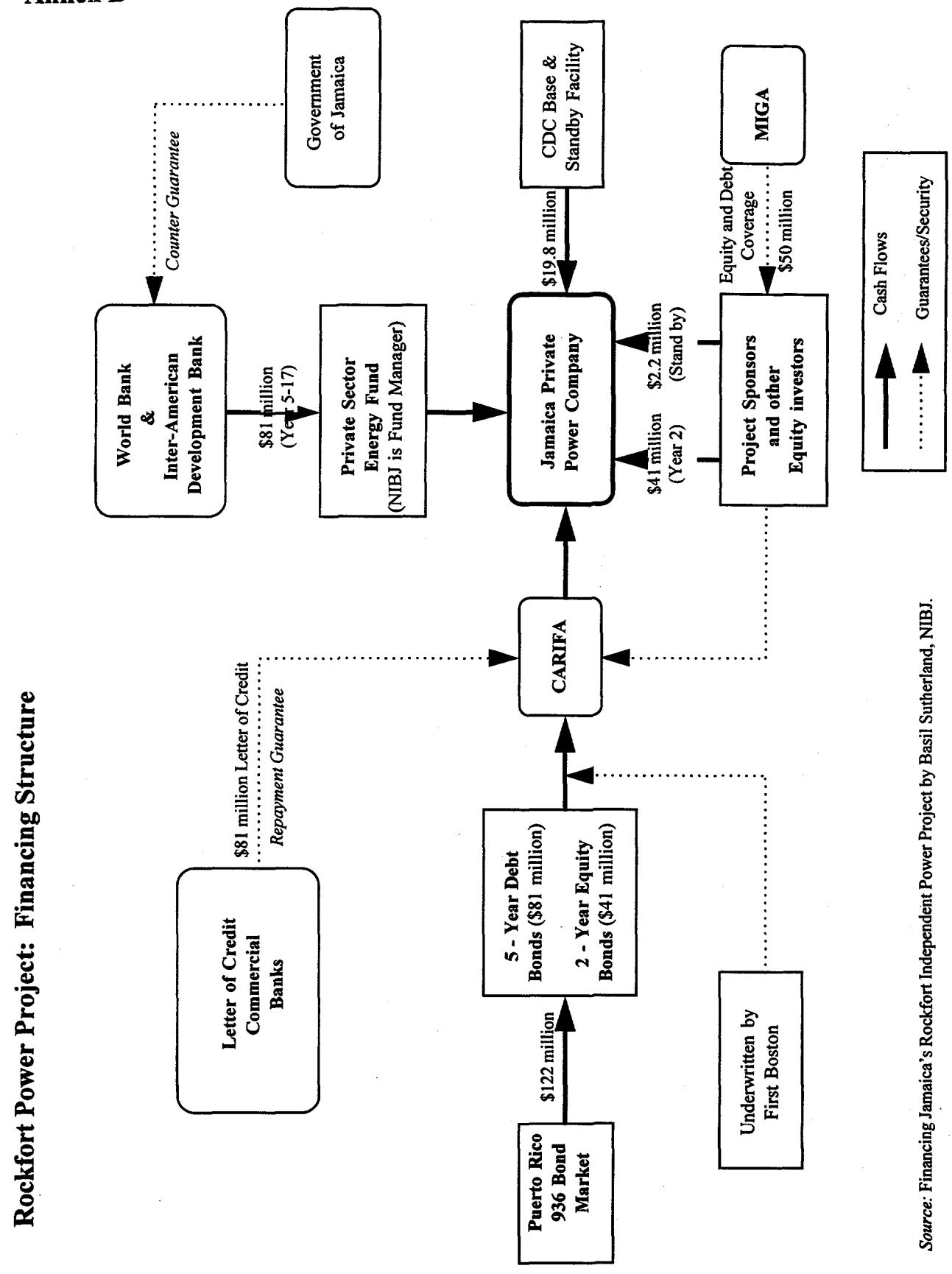
Source	*US$ millions*	*% of Total*
A. EQUITY		30.0
Sponsors	43.0	
B. DEBT		70.0
CARIFA 936 Bonds (Years 1-5)	81.0	56.0
NIBJ Energy Fund (Years 6-17)	81.0	56.0
- of which:		
World Bank	40.5	28.0
IDB	40.5	28.0
CDC	20.0	14.0
Total	144.0	100.0

Table 2. JPPC Rockfort 60MW Diesel Power Plant Cost
(in US$ millions)

Cost Categories	*Projected Cost at Financial Closure (Oct. 1994)*	*Estimated Final Cost (Oct. 1997)*
I. Construction and start-up of which:	89.3	90.6
- Power plant Construction - EPC	86.0	87.3
- Project management	2.1	4.4
- Net liquidated damages	—	(4.9)
II. Financial Costs (interest, fees, insurance etc)	21.9	35.3
III. Development Costs (incl. professional fees)	10.0	10.6
IV. Project Reserves (working capital, security deposits, debt service reserves etc.)	17.8	17.0
Total Project Costs	139.0	153.5

Annex B

Rockfort Power Project: Financing Structure



Source: Financing Jamaica's Rockfort Independent Power Project by Basil Sutherland, NIBJ.

Table 3. JPS Key Performance Indicators

	1987-88		*1988-89*		*1989-90*		*1990-91*		*1991-92*	
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Indicator										
Peak demand (MW)	262	297	268	305	275	323	283	329	290	344
Net Generation (GWh)	1623	1710	1651	1651	1681	1944	1711	2005	1724	2088
Power Purchases (GWh)		0				0		0		0
Av. No. Customers (000s)	264	271	271	281	275	294	283	310	289	324
Permanent employees	1725	1604	1750	1572	1800	1617	1850	1763	1850	1680
Losses (% net gen.)	19	20	18	23	17	19	16	18	15	19
Av. Heat rate (kj/kWh)	12250	12610	12250	13200	12550	13990	12400	13970	12550	13850
Sales (GWh)	1315	1371	1354	1271	1395	1569	1437	1632	1485	1689
Av. tariff (J$/kWh)		0.66		0.65		0.67		0.98		1.76
Av. tariff (USc/kWh)		12		12		11		13		13
Earnings before taxes (J$ mn)				-23		-55		48		178
Rate of Return on Net Assets (%)	5	6.5	6	0.7	8	0.5	8	4.3		6.5
L.term debt/equity (%)	36	68	38	50	39	42	40	45	44	46

	1992-93		*1993-94*		*1994-95*		*1995-96*		*1996-97*	
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Indicator										
Peak demand (MW)	297	354	305	382	365	392	365	424	365	427
Net Generation (GWh)	1775	2153	1829	2280	2157	2249	2237	1962	2328	1889
Power Purchases (GWh)		0		0		85		488		695
Av. No. Customers (000s)	293	337	299	353	350	372	357	390	364	419
Permanent employees	1850	1814	1850	1874	1850	2063	1850	2103	1850	1951
Losses (% net gen.)	15	21	19	19	18	19	17.5	17	16	17
Av. Heat rate (kj/kWh)	12700	13510	12870	13650	13600	13510	13942	14090	13070	13430
Av. customer minutes lost						3319		1053		785
Sales (GWh)	1509	1701	1555	1838	1747	1890	1812	2037	1886	2147
Av. tariff (J$/kWh)		3.16		3.48		4.04		4.82		n.a
Av. tariff (USc/kWh)		13		13		12		13		
Earnings before taxes (J$ mn)		792		789		-36		-59		n.a
Rate of Return on Net Assets (%)	8	8.6	8	5.3	8	0.9	8	0.9		n.a
L.term debt/equity (%)	47	32	49	41	49	49	49	45		n.a

Note: Targets upto 1993-94 from Power 4 SAR and thereafter from ESDP SAR.

Annex B

Table 4. Summary Characteristics of Jamaican Private Power Projects

Name & Description	*Capacity in MW*	*Capital Cost (in US$ millions)*	*Contract duration in years*	*Av. Discounted price (US¢/kWh)*[a]
Rockfort Slow-speed diesel	61	154	20	6.9
Old Harbour barge-mounted med.speed diesel	72	96	20	7.5
Bogue barge-mounted gas turbine	43	29	3	11.7

a. Including fuel cost for all three projects.
Source: NIBJ, JPS.

Annex C

Jamaica Public Service Company Ltd.
Corporate Services Division
6 Knutsford Boulevard, P.O. Box 54, Kingston, Jamaica Telephone
(876) 968-4034 Fax (876) 929-4857

Fax

To:	Roger Slade	**From:**	Hopeton Heron
Fax:	202 522 3123	**Pages:**	
Company:	The World Bank	**Date:**	4/6/98
Re:		**CC:**	

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Attached is response to the Jamaica: Fourth Power Project (Loan 2869-JM) and Energy Sector Regulation and Privatization Project (Loan 3502-JM) Draft Performance Audit Reoprt which was submitted undercover of May 14, 1988

Best Regards,

Annex C

Comments on the Draft Performance Audit Report For Fourth Power Project (loan # 2869-JM) Energy Sector Regulation and Privatization (loan #3502 JM)

Fourth Power Project *(loan # 2869-JM)*

The draft performance audit report seeks to review the development and implementation of passed loan(s) and, presents an opinion on how it might have been done differently to enhance the results.

The following points compliment the report: -

Project Objective and Design

The report states that the project objectives for the Fourth Power Project, as outlined at the preparation stage, were not clear. It further states that in hindsight, it should have included a generation component.

An objective whose "primary aims are to improve the systems operating efficiency and to provide additional installation to serve new customers" seems clear enough. As to weather these objectives were met is really the issue.

- System losses improved from 23% in 1989 to 19% in 1995 at the close of the project, it is presently at 17%. It is a fact, however that this improvement was below the target of 15% which was set for the project.
- The number of customers improved from 281,000 in 1989 to 353,000 in 1994 above the target of 299,000 set for the project.

With respect to the inclusion of a generation component in the project, at the time of appraisal, the performance of the generating system was satisfactory with respect to availability and capacity having just benefited from major rehabilitation which was carried out under the Third Power Project.

The effectiveness of the loan was influenced by the onset of Hurricane Gilbert in 1988; JPSCo's focus at the time was, to effect restoration in the shortest possible time. To have reviewed the project components and include a generation component for a project that already taken two years to become effective would have seemed illogical. Also with the devastation of the hurricane, it would have been challenging to make predictions on load growth, general economic performance and hence the need for additional generating capacity.

Implementation

Throughout the implementation JPSCo followed the procurement rules as set out by the World Bank. We are not aware that JPSCo has any "cumbersome award procedures" outside of these rules, which contributed to the slow down of the project.

Key Issues

It is a fact that JPSCo's competitiveness on the labour market has been restored.

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Energy Sector Regulations and Privatization (ESDP) Project (loan #3502-JM)

Project Objectives

We agree that the objectives, which were set at the beginning of the project, were highly relevant to the problems facing the Jamaican Energy Sector at the time.

Project Design and Quality at Entry

The Project design was well intentioned and had enough flexibility built in to ensure that JPSCo addressed the issue of shortfall in Generating Capacity, which was significant at the time.

Project Implementation and Achievement of Objective

The on time, on budget implementation of the 33 MW combustion turbine plant (GT 10) at Hunts Bay is some testimony to the improvement in the company's ability to implement Capital Projects.

The implementation of the 60 MW plant by the Private Sector encountered delays beyond expectations.

The company, not being able to wait on the process had to do its own solicitation for capacity from the Private Sector. This resulted in a request for a 40 MW plant on a 'Fast Track' basis.

Impacted by the explosion of Old Harbour Unit #4 in June 1994. This solicitation was revised upwards to a 72 MW facility. The deal was closed and commissioning took place ahead of the original World Bank project. Again the company, in the spirit of the prevailing policy and operating framework demonstrated that it had benefited from institutional strengthening, and as such was able to put the necessary capacity in place when it was needed.

We agree with the conclusions of the Draft Performance Audit Report with respect to the ESDP project, which states that "The structure of this project is not a model to be followed".

JPSCo.
June 4, 1998

Annex C

OFFICE OF UTILITIES REGULATION
P.O. Box 593, 36 Trafalgar Road, Kingston 10, Jamaica W.I.
Tel: (876) 968-6053, 968-6057, Fax: (876) 929-3635, Toll Free: 1-888-991-2209

1998 June 04

Mr. Roger Slade
Manager
Sector and Thematic Evaluation Group
Operations Evaluation Department
The World Bank
1818 H Street N.W.
Washington, D.C. 20433
U. S. A.

Dear Mr. Slade,

Re: **Jamaica: Fourth Power Project (Loan 2869-JM) and Energy Sector Regulation and Privatization Project (Loan 3502-JM)**
Draft Performance Audit Report

We acknowledge receipt of the above-referenced report with your request to submit our comments by 1998 June 4.

We are not in a position to comment on the Fourth Power Project (Loan 2869-JM) as we have not been associated with that programme.

Our understanding of the Energy Sector Regulation and Privatization Project (Loan 3502-JM) are largely restricted to the OUR's perspective of developments in the sector, recognizing that the OUR commenced operation in 1997 January. As such, we are not in a position to comment, from a factual basis, on the wider issues related to the project.

While we have no comments regarding the broad scope of the commentary and conclusions of the report we should bring the following points of detail to your attention:

.../2

Annex C

Mr. Roger Slade
The World Bank
1998 June 04
Page 2

Page 16, para. 3.20 - The comment should be made that "The OUR also lacks the authority to regulate the utility companies which predate the Act." We would suggest that the sentence beginning "The necessary modifications have been drafted .... during 1998", be replaced with the following - "The necessary modifications have been identified and are being considered by the Cabinet with a view to enacting the amendments to the Legislation during 1998."

Page 17, clause 3.29 - Last sentence - The term of the Performance Contract is three years, **not** five.

Page 32 - Annex B - "Bogue barge mounted gas turbine' . . . . .. delete "barge mounted.'

Please do not hesitate to contact us should you require any clarifications.

Yours sincerely,

.....
Winston C. Hay
Director General

JPM:ctj

Annex C

National Investment Bank of Jamaica Limited

11 Oxford Road, Kingston 5, P.O. Box 889, Kingston, Jamaica, W.I.
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E-mail: nibj@infochan.com

4 June 1998

Mr. Roger Slade
Manager, Sector and Thematic Evaluation Group
Operations Evaluation Department
The World Bank
1818 H St. N.W.
Washington, DC 20433
U.S.A.

Via Fax: (202) 522-3123

Dear Mr. Slade:

Comments on Draft Performance Audit Report
Jamaica: Fourth Power Project (Loan 2869-JM) and Energy Sector Deregulation and Privatisation Project (Loan 3502-JM)

I am commenting on the above-captioned report on behalf of both Petrojam Limited and the National Investment Bank of Jamaica (NIBJ). My comments are limited to those sections of the report dealing with the Energy Sector Deregulation and Privatisation Project (ESDPP) (Loan 3502-JM).

We agree for the most part with the content of the draft report and its overall findings. However, please note our comments on specific aspects of the report as follows:

Paragraph 3.21: We do not agree that NIBJ's role in supervising JPS through a performance contract diminishes the role of the OUR. While it could be argued that there is the *possibility* for the role of the OUR to be diminished, NIBJ in practice works very closely with and relies on the OUR's input in its supervision of JPS. We do not impede the OUR's ability to independently monitor and evaluate JPS' operations. NIBJ would in principle insist on the implementation of any recommendations made by the OUR subject to such recommendations being in keeping with the terms of the performance agreement.

.../2

Annex C

Paragraph 3.22: As you are aware, NIBJ played a central role in the attempted privatisation of JPS. We are not aware that there was ever any shift in the Government's position that would have caused the criterion of maximisation of financial returns to be given a higher priority than efficiency gains in the privatisation of JPS. We think that the suggestion that this was the case is unfounded.

Paragraph 3.24: Our experience does not suggest that the incomplete condition of the regulatory framework lessened the degree of interest from the private sector in the privatisation of JPS. In our view, the fact that only two of the five pre-qualified investors submitted proposals was due primarily to the fact that the bid preparation time was deemed to be too short by those who did not submit proposals.

Paragraph 3.35: We do not agree that the outcome was unsurprising. In our view, the likely factor that only one bid was received for the refinery was due primarily to the haste with which the refinery privatisation was attempted as a result of the Government's effort to fulfil a conditionality under the PSDAL loan from the World Bank. It is of note that the Government has recently received a number of unsolicited offers for the purchase of the refinery as the difficulties in closing the deal with the prospective management buyout team became apparent.

Paragraph 3.52: We do not agree that structural reform in the petroleum sector is incomplete. The petroleum sector in Jamaica has been fully deregulated at all levels. Petrojam, as the report itself notes (Para. 3.31) has been viable enough to survive in an environment where it was put at a competitive disadvantage because of the duty structure. While NIBJ agrees that it is in the interest of the Government to continue to explore the possibility of privatising Petrojam, we do not see the need at this point for any further significant policy initiatives in the petroleum sector.

Yours sincerely,

Stephen Wedderburn
Director – Special Projects & Infrastructure

Annex C

Comments received from Mr. Winston C. Hay, Director general, Office of Utilities Regulation[1]:

These comments which follow reflect my personal opinions, not those of the organization with which I work.

Some of the difficulties which were experienced with the project could have been foreseen, and in fact were drawn to the attention of a number of Bank staff members with responsibility for some aspects of project development. It is that consideration which prompts the desire to submit these comments, as perhaps they will now merit more attention than they did when originally expressed. Among these issues are:

Least Cost Planning. Traditional least cost planning techniques are inappropriate for independent power projects. The cost of power and energy from such projects will be strongly influenced by the investor's perception of risk, which is not a factor in least cost planing. In any case least-cost planning is not an exact science, and should not lead to absolute rigidity in technological solutions. In this respect it is interesting to note that when the request for expressions of interest in this project was first issued, combined cycle plant was the technology specified. The combined cycle technology was supposedly selected after rigorous least cost planning studies. The original invitation to submit expressions of interest was withdrawn, reportedly because of questions raised by interested parties as to the appropriateness of the chosen technology for the intended service. It was in the second invitation that low-speed diesels became the technology of choice.

Technology Specification. If electricity is to be obtained at the lowest cost, bidders should not be unduly restricted in the choice of technology. Such restriction is even more questionable when reduced to a level such as the difference between low- and medium-speed diesels. The purchaser need only be satisfied that the proposed technology has been proven under similar conditions as those in which the facility will operate, and that the project sponsor is financially and organizationally robust. The technology restriction in the Request for Proposals prevented medium-speed diesels from being considered, thereby narrowing the list of potential bidders by a considerable margin. It is significant that the Wartsila proposal for the Rockfort units was rejected, although some years later essentially the same package was accepted for location at Old Harbour, and in fact entered service before the Rockfort plant. In operation the Wartsila plant is no less reliable than that at Rockfort.

It is true that the cost of energy from the Wartsila plant is higher than that from the Rockfort facility, but this may well be so because the Old Harbour contract was signed at a time when JPS was in a very weak negotiating position, experiencing severe capacity shortages as a result of loss of two major steam generating units at Old Harbour in June 1994. Paragraph 3.39 of the OED report suggests that the higher cost of funds at Old Harbour (compared to Rockfort)

1. Transcript of electronic message addressed to Mr. Barbu (OEDST) on July 16, 1998.

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resulted in higher electricity prices. However, it is probable that the duress under which JPS was operating at the time of contract signature for the Old Harbour plant was a more critical factor in determining the electricity purchase price. None of the arguments advanced as to why the low speed diesel was the only appropriate technology for Jamaica will be found to have any objective validity.

Government Financing of Power Sector Expansion. A supposed advantage of independent power is that the government will be relieved of the burden of financing power sector expansion. However, in this project, the government is not only the borrower from the multi-lateral institutions, but also guarantees JPS' payment obligations to the project operators. Under this scenario, and given the excessive investment costs of the project, there can be little doubt that the government is more financially exposed than it would have been, had the project been undertaken in the traditional public sector model.

Competition in the Market. Although a truly competitive environment for power purchases is unrealistic in Jamaica at this time, a step could have been taken in this direction if the purchase contract had been differently formulated. Since JPS is under no obligation to purchase energy, there was no need for a fixed energy purchase price. The developer could have been allowed to bid for energy supply, with a guaranteed maximum sale price. As more and more IPPs enter the market, competition in supply would have been made possible. The project allowed competition for the market only, and the unnecessary restrictions on a potential sponsor's freedom to structure his proposal as he considered best, restricted the actual proposals to two only, certainly not ideal from the standpoint of competition for the market.

Contract Period. Twenty years is too long a period for a contract of this nature. A shorter period would have allowed the investors to recover the capital investment with reasonable returns, and then permitted this block of power and/or energy to be re-bid sooner, increasing the opportunities for competition.

The report does not indicate the full extent of the costs to the Jamaican power sector which resulted from the delay in implementing the project. Had the project been implemented as originally scheduled the following events (not arranged in any particular order of significance) would have been affected and system costs reduced:

- Generation from older, more inefficient units would have been lessened.
- The investment required to purchase the 33 MW gas turbine (GT10) would have been postponed.
- The energy generated by GT10 in the period by which its installation was advanced would have been substituted for by cheaper energy.

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- The disruptions in system reliability resulting from the boiler explosion at Old Harbour in 1994, would have been much less severe. In fact, it is not stretching the truth to say that the explosion would not have occurred at all. Capacity shortfalls caused the scheduled overhaul of the boiler to be postponed for a number of months (with the approval of the insurers) during which period it exploded. Had the overhaul taken place as originally scheduled, it is probable that the disastrous accident would have been avoided.

It should not have been expected that the Rockfort project would have been perfect. It has provided practical experience from which other developing countries may learn. However, it will serve teaching functions best if the areas in which it was less than ideal are openly recognized.