ADB

Project Completion Report

PCR: MLD 26305

Third Power System Development Project (Loan 1532-MLD[SF]) in the Maldives

May 2005

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – rufiyaa (Rf)

		At Appraisal (June 1997)	At Project Completion (January 2004)
Rf1.00	=	$0.0846	$0.0781
$1.00	=	Rf11.82	Rf12.80

ABBREVIATIONS

ADB	–	Asian Development Bank
Danida	–	Danish International Development Assistance
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
MOFT	–	Ministry of Finance and Treasury
NDF	–	Nordic Development Fund
O&M	–	operation and maintenance
RRP	–	report and recommendation of the President
STELCO	–	State Electric Company Ltd.
USEPA	–	United States Environmental Protection Agency

WEIGHTS AND MEASURES

kV (kilovolt)	–	1,000 volts
kW (kilowatt)	–	1,000 watts
kWh (kilowatt-hour)	–	unit of electrical energy
m (meter)	–	unit of length
MW (megawatt)	–	1,000,000 watts
MWh (megawatt-hour)	–	1,000 kWh
V (volt)	–	unit of electrical voltage
W (watt)	–	unit of active power

NOTES

(i) The fiscal year (FY) of STELCO and the Government ends on 31 December.

(ii) In this report, "$" refers to US dollars.

CONTENTS

BASIC DATA

A. Loan Identification

1.	Country	Maldives
2.	Loan Number	1532-MLD(SF)
3.	Project Title	Third Power System Development Project
4.	Borrower	Republic of Maldives
5.	Executing Agency	State Electric Company Ltd.
6.	Amount of Loan	SDR5.069 million ($ 7 million)
7.	Project Completion Report Number	PCR:MLD 883

B. Loan Data

1.	Appraisal	
	– Date Started	11 May 1997
	– Date Completed	28 May 1997
2.	Loan Negotiations	
	– Date Started	28 July 1997
	– Date Completed	30 July 1997
3.	Date of Board Approval	9 September 1997
4.	Date of Loan Agreement	7 January 1998
5.	Date of Loan Effectiveness	
	– In Loan Agreement	7 April 1998
	– Actual	17 April 1998
	– Number of Extensions	1
6.	Closing Date	
	– In Loan Agreement	30 June 2001
	– Actual	9 January 2004
	– Number of Extensions	4
7.	Terms of Loan	
	– Interest Rate	1% per annum
	– Maturity (number of years)	40 years
	– Grace Period (number of years)	10 years
8.	Terms of Relending (if any)	
	– Interest Rate	12% per annum[1]
	– Maturity (number of years)	20 years
	– Grace Period (number of years)	3 years
	– Second-Step Borrower	State Electric Company Ltd.
9.	Disbursements	
	a. Dates	

Initial Disbursement	Final Disbursement	Time Interval
24 July 1998	9 January 2004	65.5 months
Effective Date	**Original Closing Date**	**Time Interval**
17 April 1998	30 June 2001	38.5 months

[1] ADB approved the Borrower's request to reduce the relending rate to 8% per annum effective 1 October 2004.

b. Amount ($ million)

Category [a]	Original Allocation	Last Revised Allocation	Net Amount Available	Amount Disbursed	Undisbursed Balance [c]
01	3.25	2.55	2.50	2.47	0.08
02	1.73	2.75	2.75	2.69	0.06
03	1.34	1.28	1.28	1.25	0.03
04	0.07	0.07	0.07	0.07	0.00
05	0.61	0.00	0.00	0.00	0.00
Total	**7.00**	**6.65**	**6.65**	**6.48**	**0.17**

[a] 01– Civil works; 02 – Distribution equipment and supplies; 03 – Consulting services; 04 – Service charge during construction; 05 – Unallocated.
[b] The difference between the original amount as against the revised total amount was due to the exchange rate variation between the amount in special drawing rights (SDR) and the dollar equivalent.
[c] The undisbursed loan amount of SDR 117,723.16 was cancelled at loan closing on 9 January 2004.
Source: Asian Development Bank

10. Local Costs (Financed)
- Amount ($) None

C. Project Data

1. Project Cost ($ million)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	18.13	21.22
Local Currency Cost	4.61	4.11
Total	**22.74**	**25.33**

2. Financing Plan ($ million)

Cost	Appraisal Estimate	Actual
Implementation Costs		
Borrower Financed (STELCO)	8.74	9.03
ADB Financed	6.93	6.41
NDF/Danida	5.56	9.82
Total	21.23	25.26
IDC Costs		
Borrower Financed (STELCO)	1.44	0.00
ADB Financed	0.07	0.07
Other External Financing		0.00
Total	1.51	0.07

ADB = Asian Development Bank, Danida = Danish International Development Assistance, IDC = interest during construction, NDF = Nordic Development Fund, STELCO = State Electric Company Limited.

3. Cost Breakdown by Project Component ($ million)

Component	Appraisal Estimate			Actual		
	Foreign	Local	Total	Foreign	Local	Total
Part A: Two 6,000 kW Diesel Generating Units	9.48	0.00	9.48	12.76	1.16	13.92
Part B: Civil Works for Diesel Power Plant	3.05	0.00	3.05	2.49	0.73	3.22
Part C: Distribution System	1.64	0.16	1.81	2.69	1.15	3.84
Part D: Consulting Services for Engineering	0.95	0.02	0.97	2.91	0.33	3.24
Part E: Management Consulting Services	0.30	0.00	0.30	0.30	0.00	0.30
Total Base Cost	15.42	0.18	15.61	21.15	3.37	24.52
Taxes and Duties	0.15	3.04	3.04	0.00	0.74	0.74
Interest During Construction	9.48	1.36	1.51	0.07	0.00	0.07
Contingencies	9.48	0.03	2.59	0.00	0.00	0.00
Total Project Cost	**18.13**	**4.61**	**22.74**	**21.22**	**4.11**	**25.33**

4. Project Schedule

Item	Appraisal Estimate	Actual
Date of Contract with Implementation Consultant	October 1997	June 1998
Date of Contract with Management Consultant	November 1997	March 1999
Completion of Engineering Designs	November 1998	April 1999
Civil Works Contractor		
Date of Award	April 1999	August 2000
Completion of Tests and Commissioning	July 2000	December 2002
Start of Operations (Takeover Certificate)	July 2000	November 2002
Procurement Dates		
First Procurement	June 1999	April 2001
Last Procurement	July 2000	January 2004

5. Project Performance Report Ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
From 01 June 1998 to 31 December 1998	Satisfactory	Satisfactory
From 01 January 1999 to 31 December 1999	Satisfactory	Satisfactory
From 01 January 2000 to 31 December 2000	Satisfactory	Satisfactory
From 01 January 2001 to 31 December 2001	Highly Satisfactory	Satisfactory
From 01 January 2002 to 31 December 2002	Highly Satisfactory	Satisfactory
From 01 January 2003 to 31 December 2003	Highly Satisfactory	Satisfactory
From 01 January 2004 to 31 September 2004	Highly Satisfactory	Satisfactory

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days[a]	Specialization of Members[b]
Fact Finding	5–22 May 1996	5	90	b, d, g, h, i
Project Consultation	25–28 Aug 1996	1	4	d
Project Consultation	7–8 Jan 1997	1	2	d
Appraisal	11–28 May 1997	5	90	b, c, d, g, i
Inception	27 Sep–4 Oct 1998	1	4	a
Review	10–14 Oct 1999	1	5	a
Review	26–31 Oct 2000	2	12	a, k
SLA	13–18 Feb 2002	2	12	a, j
SLA	24 Jun–3 Jul 2002	3	15	j, l, m
SLA	7–15 Apr 2003	3	12	j, m, n
PCR[c]	8–16 Dec 2004	3	27	b, j, l,

PCR = project completion review, SLA = special loan administration.

[a] In case of a mission covering more than one project, the number of person-days has been estimated in accordance with the number of projects and tasks covered during the mission.

[b] a – engineer, b - financial analyst, c - counsel, d - economist, e - procurement consultant or specialist, f - control officer, g - programs officer, h – environment specialist, i – consultant, j - project/operations analyst, k - secondee, l - energy specialist, m – project analyst unit head, n - portfolio management specialist.

[c] The Project Completion Report was prepared by Samuel Tumiwa, Energy Specialist, SAEN (South Asia Department, Energy Division), Hee Young Hong, Financial Analyst, SAEN and Carmencita A. Roque, Assistant Project Analyst, SAEN.


MALDIVES
THIRD POWER SYSTEM
DEVELOPMENT PROJECT
(as completed)
INTERISLAND
BASIN
COMMERCIAL
HARBOR
Old Power Station
New Power Station
Southwest
Harbor
Wadu Channel
National Capital
Atoll Capital
Power Station
Substation
Transmission Line
Road
Atoll Administrative Boundary
Boundaries are not necessarily authoritative.
72°00'E
74°00'E
6°00'N
1°00'N
NORTH THILADHUNMATHI ATOLL
(HAA ALIFU)
Dhidhdhoo
Gailandhoo Channel
Nolhivaranfaru
SOUTH THILADHUNMATHI ATOLL
(HAA DHAALU)
NORTH MILADHUNMADULU ATOLL
(SHAVIYANI)
Moresby Channel
Farukolhufunadhoo
Alifushi
SOUTH MILADHUNMADULU ATOLL
(NOONU)
NORTH MAALHOSMADULU ATOLL
(RAA)
Manadhoo
Ugoofaaru
Naifaru
FAADHIPPOLHU ATOLL
(LHAVIYANI)
Eydhafushi
SOUTH MAALHOSMADULU ATOLL
(BAA)
Wadu Channel
MALÉ ATOLL
(KAAFU)
Rosdhoo
MALÉ
ARI ATHOLU UTHURUGOFI ATOLL
(NORTH ALIFU)
Mahibadhoo
Fulidu Channel
ARI ATHOLU DHEKUNBURI ATOLL
(SOUTH ALIFU)
Felidhe
Keyodhoo
FELIDHE ATOLL
(VAAVU)
Ariyaddu Channel
NORTH NILANDHE ATOLL
(FAAFU)
Wataru Channel
Magoodhoo
Nilandhoo
MULAKU ATOLL
(MEEMU)
Muli
SOUTH NILANDHE ATOLL
(DHAALU)
Kudahuvadhoo
Kudahuvadu Channel
KOLHUMADULU ATOLL
(THAA)
Veymandhoo
Hithadhoo
Veymandu Channel
HADHDHUNMATHI ATOLL
(LAAMU)
One and Half Degree Channel
MALDIVES
Viligili
NORTH HUVADHU ATOLL
(GAAFU ALIFU)
Thinadhoo
SOUTH HUVADHU ATOLL
(GAAFU DHAALU)
Equatorial Channel
Foamulah
ADDU ATOLL
(SEENU)
FOAMULAKU ATOLL
(GNAVIYANI)
Hithadhoo
05-0272 HR

I. PROJECT DESCRIPTION

1. The Project was to provide additional power supply to support continuing economic growth in the Maldives and to improve standards of living. Economic growth in the country had been high, and power demands in the capital of Malé had grown very rapidly. This had resulted in power shortages and an urgent need to develop additional generating capacity in Malé. The Project scope included:

(i) Part A: two new 6 MW diesel generating units in Malé with ancillary and auxiliary equipment;

(ii) Part B: civil works for an extension of the power station building to house the new generating units;

(iii) Part C: distribution system development in Malé, including 11kV distribution cables, additional 11kV/400V distribution transformers, and a new 11kV double bus-bar switching facility to replace the existing switch gear;

(iv) Part D: engineering consulting services for project design, preparation of tender documents, assistance in bid evaluation, and construction supervision; and

(v) Part E: consulting services to help State Electricity Company, Ltd. (STELCO) strengthen management and human resource development.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

2. ADB had provided financial support for power sector development in Malé through three previous loans[1] to the Maldives Electricity Board (MEB) since 1987. With the corporatization of MEB to form STELCO, the long-term objective of ADB's development assistance was to strengthen STELCO commercially and enable it to raise funds for expansion independently. However, at the time it did not appear feasible to finance the Project entirely from STELCO's own retained earnings and other sources on satisfactory terms. ADB's presence in the Project was to ensure adequate financing of total Project costs, induce a greater willingness on the part of other co-financiers, and ensure safeguards against higher prices for equipment procurement through international competitive bidding. In addition, the Project was designed for a larger share to be financed from STELCO's retained earnings and other financing sources and a reduced share of the Project costs by ADB and other co-financiers as a stepping-stone for STELCO to self-finance future expansion of the power system in Malé. A project preparatory technical assistance (PPTA)[2] was provided to prepare the loan. The PPTA is considered adequate in the design of the Project.

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[1] The loans are: (i) ADB. 1984. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maldives for a Multiproject Loan.* Manila, (ii) ADB. 1987. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maldives for Power System Development Project* (Loan No. 848-MLD[SF]:Power System Development). Manila, and*, (iii)* ADB. 1991. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maldives for the Second Power Development Project.* Manila.

[2] ADB. 1993. *Project Preparatory Technical Assistance for the Preparation of the Third Power System Development Project.* Manila.

3. The Project rationale was technically justifiable as additional generating capacity on Malé, which at the time contained one quarter of the national population, to serve the rapidly growing power demands. The load growth from the past decade had averaged 17% annually and the load growth forecast for the immediate future was similarly high. The preparatory feasibility studies evaluated alternative types of generating equipment and alternative unit sizes and recommended that two new diesel generating units of about 6 MW each would be the most practical and least-cost plan for generation expansion. Malé's distribution system also needed reinforcement. The continued load growth required expansion and strengthening of the 11kV distribution system, including more 11kV underground cables, additional 11 kV/400 V distribution transformers, and a new double bus-bar 11kV switchgear facility to improve system reliability and to accommodate the additional generating capacity.

4. Another objective of the Government and ADB in the power sector was to strengthen STELCO's technical capacity, management capabilities, and human resources development. The Project financed consulting services for project implementation that included detailed design of layout drawings, design of civil works, preparation of tender documents, evaluation of tenders, and supervision of construction. By working with the implementation consultants, it was expected that STELCO engineers would also learn. In addition, the Project also financed consulting services to strengthen the management capability and human resource development to facilitate STELCO's transformation from a government agency into a corporation.

B. Project Outputs

5. The chronology of major events in project implementation is shown in Appendix 1. The Project was formulated to (i) increase generating capacity in Malé by 12 MW; (ii) enable the retirement or relocation of seven generating units with a total derated capacity of 3.3 MW that were old, inefficient, and environmentally unsatisfactory; (iii) develop the 11kV distribution system in Malé; and (iv) strengthen the institutional capacity and technical capabilities of STELCO. There were no changes in scope for the Project.

6. Upon completion of detailed design by the project implementation consultants, the parts of the Project that were to be contracted out were separated into three lots. Lot A (corresponding with Part A) was for the installation of two 6 MW medium speed diesel generator units with all auxiliary and ancillary equipment, including a combustion air filtering system, back-up black start diesel generating unit, exhaust silencer and exhaust stacks, and fire protection system, on a turnkey basis. Lot B (corresponding with Part B) was for all the necessary civil works, on a turnkey basis, as required to implement the Lot A and Lot C contracts. These civil works included mainly the extension of the power station building, a new building to house the 11 kV switchgear, cooling seawater supply, boundary wall, and fuel oil storage tanks. Lot C (corresponding with Part C) was for the replacement of the existing 11 kV switchgear with a new insulated double bus-bar switchgear with all auxiliary and ancillary equipment and control systems, on a turnkey basis, and 40 new distribution substations, each consisting of transformers, MV ring main units and LV switchgear, requisite underground conductors, and earthing equipment on a supply contract basis, to be procured by the turnkey contractor. Lot A was to be financed by a mixed credit from the Nordic Development Fund (NDF), Danish International Development Assistance (Danida), and STELCO, and Lots B and C were to be funded by the ADB loan and STELCO.

7. Several variation orders were made to the scope of work for Lots A and B to improve deficiencies of the existing power plant, discovered during project implementation. For Lot A, the variations included (i) installation of a centralized control system for all the diesel generating units,

11 kV switchgear, and distribution system and (ii) overhaul of the fire main system. The variation orders for Lot A were financed by Danida and STELCO. For Lot B, the variations included (i) extension of the seawater intake and discharge system, (ii) additional excavation and backfilling for the fuel tank area, and (iii) a change in the design of the new switchgear building to house the centralized control system. The variation order for Lot B was financed by STELCO. At the time, the variation orders were not expected to delay project implementation and completion.

8. In addition, the project also retained the services of a management consultant, who produced a plan to strengthen the management capabilities and human resource capacity of STELCO, as outlined during appraisal and reflected in the report and recommendation of the President (RRP) as Appendix 4, Action Plan to Improve the Management of STELCO. Implementing this plan has helped STELCO meet the covenants for improved operations.

C. Project Costs

9. At appraisal, the project cost was estimated at $22.74 million equivalent: $18.13 million (or 80% of the project cost) in foreign exchange cost, and $4.61 million (or 20%) in local currency cost. The ADB loan at appraisal was SDR 5.069 million ($7 million equivalent).[3] Financed from ADB's Special Funds resources, the loan covered about 31% of the project cost. No local costs were financed under the ADB loan.

10. NDF was to finance an amount up to SDR4.0 million ($5.56 million equivalent) or 24% of the project cost. The balance of the project costs, amounting to about $10.18 million equivalent (including $4.61 in local cost), or 45% of the total project cost, was to be financed by STELCO.

11. During the negotiation period with the lowest evaluated bidder for Lot A in June 2000, Danida offered STELCO additional funds to implement a centralized control system for the entire power station and parts of the 11kV distribution system and additional training for STELCO personnel. The loan was signed on 26 September 2001 for EURO4,052,729 ($4.72 million equivalent). The loan portion was to finance the variation order to install a centralized control system while the grant portion was to finance all the interest charges for the NDF loan.

12. The actual project cost at completion was $25.33 million, including a foreign exchange cost of $21.22 million (or 84% of project cost), and a local currency cost of $4.11 million (or 16%), a cost overrun of $2.5 million equivalent (or 11%). The appraisal estimate included physical contingencies and provisions for price escalation on the foreign exchange and local currency costs and a duty rate of 25% on most imported equipment. However, during project implementation the Government reduced the taxes and duties to only 12.5%. This reduced the actual taxes and duties paid from the $3.04 million estimated during appraisal to $0.74 million at project completion (or a savings of $2.3 million).

13. For Part A of the Project, the actual cost was $13.92 million (compared with an appraisal estimate of $9.48 million). This included an additional $4.72 million (funded by Danida) for centralized control system, which was not included during appraisal.

14. The actual cost of Part B was $3.22 million, compared with $3.05 million at appraisal. The actual cost of Part C was $3.84 million, compared with an appraisal estimate of $1.81.

[3] During project implementation, the SDR exchange rate to the dollar changed, reducing the value of the loan by approximately 6%. At loan approval, the SDR was equivalent to $0.735; at loan closing on 9 January 2004, the SDR was equivalent to $0.669.

Because of the increased cost of distribution equipment, a reallocation of loan proceeds was approved on 26 July 2002, to provide sufficient funds for the actual cost of the distribution equipment procured under the loan.

15. The actual cost of Part D was $3.24 million, compared with an appraisal estimate of $0.97 million. The difference was due to the cost of preparing design reports related to the centralized control system and the variation orders resulting from the delays in Lot A and B. The additional cost was financed by STELCO. For Part E, the actual cost was $0.3 million, the same as the appraisal estimate.

16. A comparison of actual project costs with appraisal estimates is shown in the Basic Data, while the actual project cost by funding source is provided in Table 1. A summary of contracts financed by ADB is provided in Appendix 2.

Table 1: Financing Source
($ million)

Source	Foreign Exchange	Local Currency	Total	%
ADB	6.48	0.00	6.48	25.58
NDF	5.10	0.00	5.10	20.13
Danida	4.72	0.00	4.72	18.63
STELCO	4.92	4.11	9.03	35.65
Total	**21.22**	**4.11**	**25.33**	**100.00**

ADB = Asian Development Bank, Danida = Danish International Development Assistance, NDF = Nordic Development Fund, STELCO = State Electricity Corporation, Ltd.
Source: Asian Development Bank.

D. Disbursements

17. The projected and actual loan disbursements under the loan are compared in Appendix 3. Loan proceeds were disbursed in accordance with ADB's *Loan Disbursement Handbook.* Disbursement of the loan proceeds was slower than expected, because of delays in project implementation caused by several factors as mentioned in paras. 19–24. The loan became effective on 17 April 1998. The original closing date of the loan was 30 June 2001. This was subsequently extended four times at the request of the Borrower. The latest closing date was 31 December 2003. Following the last disbursement on 9 January 2004, ADB cancelled the remaining balance of SDR117,723.16 ($174,933.08 equivalent). That reduced the loan amount to SDR4,951,276.84 ($ 6,477,094.37). The loan was closed on 9 January 2004.

E. Project Schedule

18. The planned and actual implementation schedules are in Appendix 4. At appraisal, the Project was estimated to take 3 years, with construction to be completed by July 2000. ADB's Board approved the loan on 9 September 1997, and it became effective on 17 April 1998. The loan was extended four times from the original closing date of 30 June 2001 to the final closing date of 9 January 2004 due to significant implementation delays.

19. The components were installed and commissioned as envisaged at appraisal, including the variation orders. However, Lot A was only completed on 23 November 2002, 11 months

behind schedule[4] and the variation order for Lot A was completed on 5 August 2003, 17 months behind schedule. Lot B, including the variation order, was completed on 31 December 2002, 16 months behind schedule. Lot C was completed on 28 June 2002, 8 months behind schedule.

20. Project delays began early. Although advance action for the recruitment of consultants was approved by ADB in April 1997, the selection of the implementation consultants was delayed by eight months. Although the implementation consultants were able to catch up by three months during the design stage, the Project experienced further delays during the procurement phase. The bid evaluations by the implementation consultants had some mistakes. Although these did not result in a misprocurement, they did require clarification, thus delaying ADB's approval of the bid evaluations. These delays were further exacerbated during Project construction, mainly due to the performance of the contractors. From April 2001 onwards, the Lot B delays increased constantly and drastically, mainly due to inadequate design capabilities of the contractor's head offices regarding the elaboration of detailed design calculations and shop drawings. Furthermore, the prefabricated structural steel, which arrived on site 3 months late, was damaged during transportation and required rectification at site. Lot B was further delayed by design and construction problems with the seawater pumphouse pit, the intake system, and the noise reduction walls of the new powerhouse extension.

21. The delays in Lot B caused delays for Lot A, as the diesel generator units could not be installed because the civil works had not been completed. However, Lot A experienced its own delays. Because of a dispute between the contractor and the subcontractor for supplying the diesel generators on another project, the subcontractor had to be changed, resulting in a delay of about 8 months. The implementation consultants also discovered that the supporting structures of the exhaust stack were insufficient, to hold up the exhaust stack, especially during high winds. The exhaust stacks had to be redesigned, causing a further delay for Lot A.

22. Lot C was only delayed by 8 months. However, a failure of the control system occurred soon after STELCO took over the facility in November 2003. It took over a year to rectify the failure due to an internal dispute between the contractor and the equipment manufacturer. A more detailed account of the implementation delays as well as the steps that STELCO took to rectify the situation is attached in Appendix 5. It later became evident that the reasons for the delay of Lot A and C was that the contractor was in financial trouble and therefore could not or would not put the necessary resources into solving the problems related to project design and management (para. 24).

23. The contractors for the three lots submitted claims for additional works and extension of time. STELCO also raised claims towards the contractors regarding liquidated damages for the delays. A mutual agreement for the claims for Lot B was reached in April 2003, resulting in liquidated damages for the delay in STELCO's favor of 3% of the final contract value or about $98,000. Between January and May 2003, the Lot A and C contractor repeatedly increased the scope and amount of his claims. The final amount of claims was EURO2,090,000. The majority of claims had not been agreed to by STELCO for technical and contractual reasons, and STELCO made a counterclaim for liquidated damages for delays. Initially, the contractor refused an amicable settlement of the claims. However, after further discussions and the establishment of a Dispute Adjudication Board, an amicable agreement was reached on 1 May 2003 to settle the Lot A and C claims, with the contractor agreeing to pay STELCO EURO975,074.87.

[4] Based on estimates made during loan appraisal.

24. On 28 May 2003, shortly after the amicable settlement for Lots A and C, the contractor advised STELCO that on 14 May 2003, they had been forced into bankruptcy, pursuant to the Danish Bankruptcy Act. The contractor requested the transfer of the Lots A and C contracts to the newly formed company. After thorough consideration of the matter by the Ministry of Finance and Treasury (MOFT) and STELCO (with the assistance of the implementation consultants) and in consultation with ADB, NDF, and Danida, the STELCO Board decided to request the contractor to cause the banks holding the performance guarantees to transfer the guarantees to the newly formed company to enable the transfer of the contracts. After the banks had confirmed their agreement, the Lots A and C contracts were transferred to the newly formed company by the Memorandum of Understanding of 5 August 2003.

F. Implementation Arrangements

25. The implementing arrangements were carried out as envisaged at appraisal. STELCO was the executing agency for the project. STELCO's Board of Directors was responsible for the overall project implementation and delegated specific responsibilities to the Project Director. The Deputy Director (Finance and Accounts) served as the Project Director. The organization chart of STELCO is provided in Appendix 6.

G. Conditions and Covenants

26. The summary of the Project's compliance with loan covenants is presented in Appendix 7. Only one loan covenant was modified during implementation and no covenants were waived. The financial covenants were designed to ensure (i) the financial performance of STELCO, (ii) full cost recovery, (iii) debt-service, and (iv) improved operations through proper budgeting and timely expansion. The nonfinancial covenants were for capacity building in human resources and improving management efficiency. All the covenants were relevant.

27. STELCO achieved all the major financial covenants: (i) operating ratio did not exceed 0.9; (ii) debt-service ratio was above the 1.3 minimum; (iii) rate of return was at least 8%; (iv) self-financing ratio (SFR) was above the minimum 40%, except in FY 2002, when it dipped to 37%, due to a sizable dividend payout of Rf. 30.0 million (equivalent to $2.3 million), see para. 28;, (v) accounts receivable did not exceed 2 months; and (vi) accounts payable were less than 2 months in FY2001 and FY2002. However, accounts payable covenants were more than 2 months in FY1998–FY2000 (see Table A8.2 in Appendix 8). A new auditor,[5] was hired to audit the FY2001 and FY2002 financial statements and found inconsistencies and overstatements of payables. The financial statements were restated and the accounts payable was reduced. Pursuant to the Loan Agreement, STELCO budgeted its plans to revalue its fixed assets in 2005.

28. In 2002, MOFT requested that ADB lower the SFR covenant from 40% to 30% as the Government's finances were severely affected by the events of 11 September 2001 and they wanted increased dividends from state-owned enterprises to supplement the budget. ADB fielded a special loan administration mission to review MOFT's request. According to the Loan Agreement, the SFR was to be calculated based on the 3-year moving average of total investment required for STELCO's capital expenditure program. When STELCO calculates its dividends, it averages the capital expenditures of the previous year (actual), current year

[5] FY1998 and FY1999 financial statements were audited by Ernst & Young. The FY2000 AFS was done a year late by PricewaterhouseCoopers and was done at the same time as the FY 2001 audit. PricewaterhouseCoopers was hired from FY 2001.

(projected), and following year (projected) to get the 3-year moving average, then it retains 40%. This number is then subtracted from the net profits for the year. The profit left over, if any, is then available to be paid out as dividends. This model is flawed unless it is viewed in relation to a 5-year corporate plan, with a capital expenditure program that is tied to systems expansion and based on real projected growth of demand for electricity and is reviewed and approved by the STELCO board. If not, then any number can be "plugged in" to inflate future capital expenditures (i.e., the projected numbers for the current year and following year of the 3-year moving average), thus inflating the 3-year moving average. As such, the resulting 40% to be withheld ends up as a very large number, resulting in little or no dividend. In addition, if the capital expenditure program is not tied to revenue-earning capital expenditures, as is clearly the intention in the 5-year corporate plan, any expenditure, even nonrevenue earning expenditures, can also be included in the capital expenditure program. This is currently the case, as the new STELCO building has artificially inflated STELCO's capital expenditures, resulting in very little dividend to the Government in 2000. Because the projected numbers of the 3-year moving average are inflated, retaining 40% has allowed STELCO to self-finance a high percentage of its capital expenditures. Given this situation, ADB approved MOFT's request to lower the SFR. Details of ADB's analysis are outlined in Appendix 8.

29. Tariffs were reviewed in accordance with the loan conditions. Electricity tariffs remained at the same level from 1998 to 2002, thus decreasing in real terms; they were also reduced twice, in 2002 and 2003, for a total of 10%. STELCO does not anticipate any further changes on the tariffs in the immediate future.[6] The tariffs are presented in Appendix 9.

30. Based on the above, the financial performance of STELCO from FY1998 to FY2003[7] is considered strong. STELCO's financial statements from FY 1998 to FY 2003 are provided in Appendix 10. During this time, STELCO expanded to meet its ever-growing electricity demand. In addition, it also financed 35% of the Project costs from its internal sources. This was doable because the tariffs could support it and relative fuel costs were significantly lower than they are today. However, it is noted that the heavy capital expenditure program was accompanied by imprudent cash management and irrational allocation of capital, as shown by STELCO's decision to build a Rf73 million ($6.2 million) headquarters building (paid out in cash over 3 years).

31. STELCO's future financial position may not be as strong, because fuel prices have increased significantly, while electricity tariffs have been lowered by 10%. In addition, because of STELCO's past large investment in nonrevenue earning assets (i.e., the STELCO building), it will not be able to self-finance as much future capital expansion as it had in the past 5 years.

32. For the most part, the nonfinancial covenants were also fulfilled: (i) the action plan that was agreed upon and outlined in the RRP was substantively complied with; (ii) although late, management consultants were hired; (iii) a 5-year corporate plan was prepared in 2003 and STELCO is in the process of reviewing and updating it for 2005–2010,[8] (iv) a detailed annual budget was prepared; (v) a management information system was installed, (vi) an annual report describing STELCO's activities and financial accounts was prepared and submitted to the STELCO Board and MOFT for review; (vi) a board was appointed, representing the

[6] Although the Maldives Electricity Bureau is considered the sector regulator, it is effectively non-functional and tariffs are set based on a request by STELCO to the Office of the President.

[7] FY2003 unaudited figures are provided for reference.

[8] Compliance was late. An initial 3-year corporate plan was prepared in 2000. However, ADB did not make follow-up efforts to require STELCO to prepare this until a review mission in 2002.

government, the private sector, and STELCO management, finance, and engineering;[9] (vii) a human resource manager was hired and a training and staff development program was drawn up by the management consultants;[10] (viii) STELCO's total staff training budget was close to the 1% of annual revenues required; (ix) a salary, bonus, and benefits package was implemented for professional staff and managers; (x) qualified financial professionals were appointed to oversee STELCO's finances and accounts; (xi) an asset register and inventory system was implemented;[11] and (xii) STELCO's procurements was removed from the Director of Finance and Accounts and placed in a unit under the Managing Director.

33. Most project accounts and quarterly progress reports were submitted about 2–3 months late and audited financial statements were often submitted over a year late. This was because the financial data were not well kept or easily retrievable. Under the Project Agreement, STELCO must furnish ADB with audited financial statements no later than 6 months after the close of each fiscal year; however, submission was delayed each fiscal year. In FY2001, the audited financial statement contained over fifteen qualifications. ADB provided a staff consultant to help rectify issues raised by the auditor, mainly derived from lack of information and difficulty of record retrieval; rectify the fifteen qualifications of the auditors; and install a new accounting system. The financial statements were re-audited in FY2001. The qualifications were reduced to three and these were mainly related to STELCO's asset management, such as having too many slow-moving spare parts in stock. The FY2002 audited financial statement had only one qualification. Audit of the FY2003 accounts is still in progress, having been slightly delayed because of problems with migrating data associated with the introduction of new billing software.

H. Consultant Recruitment and Procurement

1. Consultant Selection

34. ADB approved advance action for the recruitment of consultants in April 1997. Selection for the implementation consultants and the management consultants proceeded in accordance with ADB's *Guidelines on the Use of Consultants*, as envisaged during appraisal. For the implementation consultants, three firms submitted proposals. Evaluations of the proposals were submitted to ADB for review and concurrence. The contract was awarded on 10 June 1998. This was 8 months behind the target date of October 1997 that was set at appraisal.

35. The contract for the management consultants was awarded on 10 January 1999, the contract was signed on 15 March 1999, and work commenced in April 1999. The start of the contract was 15 months behind the target date of November 1997, because STELCO needed to focus on procuring the implementation consultant and contractors, and the relevant officers could not attend to capacity-building issues until the procurements were completed.

2. Procurement

36. The procurements for the Project were for the retention of contractors for Lots A, B, and C. The contracts for Lots A and B were on a turnkey basis; that for Lot C was on a turnkey and supply basis.

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[9] The board does not yet include a lawyer as required by the covenants.
[10] The covenant also required that this plan be updated annually and submitted to ADB. STELCO never did submit the plan, nor did ADB request it until the PCR Mission.
[11] Complied late.

37. Procurements financed by ADB were undertaken in accordance with ADB's *Guidelines for Procurement*, while procurement financed by NDF and Danida were undertaken in accordance with their respective procurement guidelines. Since Lot A was co-financed by NDF and Danida, the bid evaluation was submitted to them. Twenty-seven bidders purchased the bid documents and 12 bidders attended the pre-bid meeting. The contract was awarded and signed on 28 August 2000. For Lot B, five bids were received and two bidders passed the pre-qualification criteria. STELCO submitted the bid evaluation report to ADB on 4 March 2000 and ADB approved it on 4 May 2000. The contract was signed on 31 August 2000. Four bids were received for Lot C and all four met the pre-qualification criteria. STELCO submitted the bid evaluation report to ADB on 11 January 2000 and ADB approved it on 26 May 2000. The contract was also signed on 28 August 2000. Work for all lots commenced on 11 September 2000.

I. Performance of Consultants, Contractors, and Suppliers

1. Implementation Consultants

38. The performance of the implementation consultant was satisfactory. The Project was designed in such a way that the contractors were responsible for the detailed design and for the practical aspects of the design. Serious defects in the earlier design of some of the works required the implementation consultant to spend time redesigning and making practical changes, which delayed the works considerably; consequently, the services of the consultants had to be extended accordingly. However, on occasion the implementation consultants were also to blame for the delays, as they were not familiar with ADB's procurement procedures. Progress on procurement was initially slow, and ADB had to bring this to the attention of the consultants' management. In some instances, they also took a long time to review and approve designs submitted by the contractors. Partly due to this, consultancy services cost more than double the originally estimated amount.

2. Management Consultants

39. The performance of the management consultants was satisfactory. Although initial progress was slow, the consultants involved were knowledgeable, their methodology was good, and they were able to meet their terms of reference effectively and efficiently. The quality of their reports was also good, and these continue to help STELCO in daily operations management and long-term strategic planning. The contract of the consultants was originally for 2 years; however, it was extended for 1 year as the 2 years proved insufficient for STELCO to make the desired changes in its operations and management. There were no cost overruns, and the consultants delivered their outputs on time.

3. Contractors

40. The performance of all contractors for Lots A, B, and C were unsatisfactory and resulted in serious time delays and significant cost overruns, as outlined in paras 19-24 and in Appendix 5.

J. Performance of the Borrower and the Executing Agency

41. MOFT played an active role in facilitating all project communications, especially with regard to timely submission of withdrawal applications and requests for loan extensions. They also played a strong hands-on role in expediting project implementation, participating in

meetings with the consultants and contractors, and even heading up biweekly meetings to review implementation and providing reports to ADB on these meetings. MOFT also played a significant role in resolving the issues surrounding the bankruptcy of the consulting firm for Lot A and C. The performance of MOFT is considered highly satisfactory.

42. At appraisal, STELCO was considered to be a relatively young company that was in the process of transforming itself from a government agency into a corporation. Since the inception of the Project, STELCO's management, financial planning and accounting, human resources, and technical capabilities have improved significantly. They have met all the major strategic planning, management, human resource development, and financial covenants outlined in the Loan Agreement.

43. As envisaged during appraisal, the Project was designed so that a larger share of the costs was to be financed from STELCO's retained earning and other financing sources and a reduced share financed by ADB and the other cofinanciers. During project implementation it was found that additional work was needed to upgrade the power plant and related auxiliary and ancillary equipment and civil works. To its credit, STELCO chose to issue variation orders for the additional work on a self-financed basis, instead of only undertaking the project components. This holistic approach is indicative of a corporation that is forward-looking and that has benefited from its management and human resource capacity-building assistance. As a further indication of its continuing maturity, STELCO is currently self-financing a large capital project to install a fuel conversion system that would allow it to use heavy fuels.

44. Although the Project was delayed by the nonperformance of the contractors, STELCO was also to blame because of its delays in recruiting the implementation consultants. However, STELCO did put in significant effort to expedite project implementation, as outlined in Appendix 5. Thus the performance of STELCO is considered to be satisfactory.

K. Performance of the Asian Development Bank

45. ADB's performance is considered satisfactory. ADB provided assistance and guidance on procurement and implementation issues and took prompt and efficient action on approvals, disbursements, and monitoring. ADB undertook seven project review missions (an inception mission, three implementation review missions, and three special loan administration missions) in the 7 years of the project, for an average of one review mission per year. There were no review missions in 2001. Furthermore, four different ADB officers handled the project during its life, which caused instability and impeded continuity. STELCO, by contrast, had only one Project director during the life of the Project.

III. EVALUATION OF PERFORMANCE

A. Relevance

46. The rationale for the Project was to provide additional generation capacity for Malé, improve the 11kV distribution system, and provide consulting services to strengthen the technical capacity and management capabilities of STELCO. It was in line with the Government's priorities and formed an integral part of meeting the additional electricity demand for sustainable economic growth. The Project has also significantly strengthened STELCO to serve as the power supplier and distributor for Malé. As such, the Project is rated as highly relevant.

B. Efficacy in Achievement of Purpose

47. The Project demonstrated that it has achieved the objectives of (i) increasing additional generating capacity of 12MW in Malé, (ii) enabling the retirement or relocation of seven old generating units with a total derated capacity of 3.3 MW at the first power station in Malé, (iii) developing the 11kV distribution system in Malé, and (iv) strengthening STELCO through technical, management, and human resource capacity building. It is expected that the Project will continue to provide reliable power to Malé. As such, the Project was rated as highly efficacious. [12]

C. Efficiency in Achievement of Outputs and Purpose

48. The Project is considered efficient in the achievement of outputs and purpose, despite delays due to design and implementation problems.

1. Financial Performance of the Project

49. The financial internal rate of return (FIRR) [13] of the Project is reevaluated at 13%, while it was estimated at 21.7% at appraisal. Calculations were made on the basis of the financial figures provided by STELCO. The resulting FIRR exceeded the weighted average cost of capital (WACC) for the Project, an indication of financial sustainability of the Project. The WACC was derived using the actual capital mix for the Project according to *the Guidelines for the Financial Governance and Management of Investment Projects Financed by ADB*. Appendix 11 shows the FIRR calculations.

2. Economic Performance of the Project

50. In the economic analysis, the incremental benefits and costs are reassessed with the same methodology used at appraisal. Appropriate border prices are used to convert financial costs and benefits to economic prices in constant 2002 figures. The complete analysis is presented in Appendix 12. The economic internal rate of return (EIRR) for the Project is re-evaluated at 25.5%, which is considered highly satisfactory. The EIRR result is consistent with the appraisal estimate, which is marginally lower than the 27.6% calculated at appraisal but significantly higher than the 12% economic opportunity cost of capital. The EIRR confirms increased demand for electricity by the residents of Malé and sustainable economic growth. This has come about from the improved standard of living and the resulting increase in the usage of electrical appliances to enhance comfort, efficiency, and entertainment.

D. Preliminary Assessment of Sustainability

51. The current electricity tariffs are more than sufficient to cover operating and capital costs. Problems related to financial and economic sustainability of the Project are unlikely. However, the recent increases in oil prices will have an adverse impact on STELCO's cash flow and STELCO will need to manage its finances prudently. Otherwise, the electricity tariffs will have to be adjusted in order to ensure STELCO's financial viability. Therefore, the sustainability of the Project is rated as likely. Furthermore, the operational, management, and human resource improvements at STELCO resulting from the Project have significantly improved power

[12] The physical structures built under the Project were not affected by the tsunami of December 2004.
[13] All financial and economic analyses are based on FY2002 prices because that is the year of the last audited financial statement available to the PCR mission in December 2001.

generation and delivery in Malé. In addition, STELCO has been transformed from a government agency into a growing corporation as outlined in paras 41-44. As such, the Project's institutional development impact is rated as moderate.

E. Environmental, Sociocultural, and Other Impacts

52. The overall environmental impact of the Project was positive. The old, inefficient generator sets that were located in the middle of Malé and that caused significant air, noise, and groundwater pollution were replaced. The Project's adverse environmental impacts were minor and limited to the need to ensure that the emission stacks were high enough to ensure proper dissipation before the emissions affect the ground-level atmosphere. Other environmental impacts were noise attenuation, and ensuring that environmental impacts during construction such as dust, noise, and debris were properly managed. The Project successfully implemented all the environmental management measures required.

53. NDF and Danida cofinancing included a covenant that required STELCO to properly dispose of the contaminated soil from the closed power station that housed the earlier generation units that were to be decommissioned 6 months after the Project was commissioned.[14] This has not yet been completed. A team from Danida visited the Maldives a week prior to the PCR Mission to review progress on the covenant. Their position was that since STELCO took over the Project-financed facilities in November 2002, the remediation work on the old power plant should have been completed by May 2003. STELCO's position is that although they have taken over the facilities, there are still several outstanding issues that the contractors have not resolved. As such, the Project has not yet been officially commissioned. Meanwhile, STELCO has retained an international consulting firm to conduct soil samples and propose the best way to mitigate the environmental impacts and dispose of the polluted soil. STELCO affirmed to the ADB PCR Mission that it planned to comply fully with the covenant. STELCO further clarified that the old power station was only demolished in January 2004 and that the foundations were taken out in March 2004. The soil sampling was conducted in June 2004. The consultants submitted their recommendations on the best way to address the issue during the time of the PCR Mission, but the testing of the soil samples is still going on in Germany. Danida is planning to send an independent reviewer to assess the situation and resolve the issue in a mutually acceptable way. Danida has informed STELCO and the Department of External Relations of the Ministry of Foreign Affairs (their counterpart) that the grant portion of their assistance would be turned into a loan if the covenant were not fulfilled.

54. The Project did not have any involuntary resettlement issues, as it took place only on STELCO's property. It did have positive sociocultural impacts as it has provided the residents of Malé access to reliable power and they are now using more electrical appliances for comfort, efficiency, and entertainment.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

55. Based on its relevance, efficiency, efficacy, sustainability, and institutional development impacts, the Project was considered successful.[15] Appendix 13 provides the quantitative

[14] This was not a cross conditionality to ADB's loan.
[15] This Project Completion Report (PCR) is part of a sample of PCRs independently reviewed by the Operations Evaluation Department. The review has validated the methodology used and the rating given.

assessment of overall project performance according to ADB's criteria, which determined the project rating.

B. Lessons Learned

56. While most of the significant delays were due to the unsatisfactory performance of the contractors, several lessons can be learned:

(i) **Contract packages**. Breaking up the Project into three lots with the potential for three different contractors (although the Project ended up with only two contractors) ultimately proved to be unwieldy. Coordination of the two contractors for three separate packages took up much of the time and effort of the implementation consultants and contributed significant cost overruns for them. In the future, it may be more efficient to have one contractor unless there is a strong justification to break up the contract.

(ii) **Implementation consultants**. Retaining one or two individual consultants instead of a firm (i.e., one electrical engineer and one civil engineer) with significant experience in procurement and project management to work full time in STELCO could be an option. It would cost less, and they would only have the interests of STELCO to look after. In addition, these consultants could be supplemented with specialist engineers for engineering issues outside their areas of expertise.

(iii) **Performance-based contracting.** Alternatively, if a firm were to be retained, the contract should be based on payments tied to the satisfactory completion of milestones and deliverables. Although this would require more work upfront by STELCO in preparing very detailed Terms of Reference and expected outputs for the consultants, it would guard against significant cost overruns.

(iv) **Project contractors.** More appropriate financial requirement of the contractors could have safeguarded against hiring a contractor who could not or would not provide adequate service because of financial constraints and was ultimately detrimental to the project.

C. Recommendations

1. Project Related

57. **Future Monitoring**. ADB and MOFT should ensure that STELCO submits an annual update of its 5-year corporate plan to ensure that STELCO employs prudent financial management and practices strong corporate governance. In addition, ADB should keep track of the power tariffs to ensure that STELCO remains financially viable. Both are especially important if ADB does provide future assistance for power development in Malé, see para. 60 below. In addition, the monitoring of the disposal of contaminated soil should be included in the Project Performance Audit Report (PPAR).

58. **Covenants.** All financial covenants relevant to revenue-generating companies are to be maintained. Covenants related to nonfinancial aspects, such as corporate governance and a prudent financial and management system, should be given more weight in setting future covenants.

59. **Timing of the Project Performance Audit Report**. The Project is included in the list of independent assessment by ADB. It is suggested that the PPAR could be undertaken at any time, given that the project is completed.

2. General

60. Although it was noted to MOFT and STELCO during the processing of the Project that the loan would be the final one for power sector development in Malé, future assistance for STELCO could be explored and considered by ADB, not necessarily only with the traditional Asian Development Fund loan, but other products, such as a partial risk guarantee that would allow STELCO to obtain commercial financing with more attractive terms, and also for it to develop a commercial credit history and rating.

CHRONOLOGY OF MAJOR EVENTS

Date	Event
1996	
5–22 May	Fact-finding mission fielded.
1997	
22 April	Management Review Meeting approved appraisal of the Project and advance action for recruitment of consultant.
11–28 May	Appraisal mission fielded.
30 June	Staff Review Committee approved further processing of the Project.
28–30 July	Loan negotiation was held at ADB headquarters, Manila.
9 September	ADB approved a loan of SDR 5.069 million ($7.0 million equivalent) to the Republic of Maldives.
1998	
7 January	ADB Loan Agreement and Project Agreement were signed.
24 March	The Nordic Development Fund loan for SDR4.0 million (NDF Loan 234) was signed.
17 April	ADB loan became effective.
10 June	Contract for project implementation consultant (Part D) was signed.
27 Sep–4 Oct	Loan inception mission fielded.
1999	
15 March	Contract with management consultant (Part E) for institutional strengthening of STELCO was signed.
15 April	Basic engineering and specifications completed.
05 August	Part E Consultant submitted the Diagnostic Report Program to Improve STELCO's operations.
01 September	Bids were floated for Lot A, Lot B, and Lot C.
10–14 October	First review mission fielded and noted that the project was lagging by 6 months due to delays in engaging project implementation consultants, finalizing project designs, and preparing bidding documents.
2000	
4 May	ADB approved contract award for procurement of 11kV switchgear and distribution equipment (Lot C).
26 May	ADB approved contract award for civil works (Lot B) power plant extension.
28 August	Contracts for Lots A and C were signed.
31 August	Contract for Lot B was signed.
11 September	Works for Lot A, Lot B, and Lot C commenced.
26–31 October	Review mission fielded and noted that the agreed milestones to make up for the delays in procurement as agreed upon during the last review

Date	Event
	mission in October 1999 were not accomplished, because of the bid evaluation reports did not conform to ADB's procurement procedure. Consequently, there were delays in awarding of contracts and works could not be completed before the loan closing date of 30 June 2001.
2001	
9 January	ADB received request from STELCO to change the main subcontractor for Lot C as the legal dispute related to another project was endangering the timely completion of Lot C contract.
12 July	ADB approved STELCO's request for change of the main subcontractor for Lot C.
3 August	ADB approved the Government's request for extension of loan closing date (first extension) from 30 June 2001 to 30 June 2002 to enable completion of the Project.
26 September	The Danida loan was signed.
2002	
13–18 February	SLA mission fielded.
14 February	First consignment with two assembled compact stations arrived at project site.
23 February	11kV switchgear panels were erected.
06 March	Transformers arrived at site.
31 March	Balance equipment arrived at site.
24June–3 July	SLA mission fielded.
28 June	PAC for Lot C was issued. The 11kV switchgear was successfully commissioned and the system was energized on the same day.
26 July	ADB approved the Government's request for extension of loan closing date (second extension) from 30 June 2002 to 31 December 2002 and reallocation of loan proceeds to provide sufficient funds for the actual cost of the distribution equipment procured under the loan.
30 August	ADB engaged the services of a staff consultant to carry out a quick diagnostic study of the current accounting system and procedure of STELCO. The consultant's report was received on 10 March 2003.
23 November	PAC was issued for Lot A - Base Contract (NDF Loan).
31 December	PAC was issued for Lot B.
2003	
7–15 February	SLA mission fielded.
1 May	The dispute with the Lot A and Lot C contractor regarding extension of time and additional work and cost was amicably settled between STELCO and the consulting firm in accordance with the Agreement to Settle the Lot A and the Lot C Contracts.
9 June	ADB approved the Government's request for extension of loan closing date (third extension) to enable completion of the project, delayed by Lot B (civil works), and Lot C (distribution equipment) contractors, and resolve the dispute between the contractors.

Date	Event
29 June	MOFT advised that STELCO had been informed by the supplier for Lot C that one of its creditors had filed a petition in bankruptcy against them. In this connection, the supplier for Lot C had been forced to apply to the Court for an administration order.
5 August	PAC issued for Lot A, Variation No. 1 (Danida Loan).
5 August	MOU was signed to transfer the Lot A and Lot C contract to the newly formed consulting firm.
27 October	ADB approved the Government's request for extension of loan closing date (fourth extension) from 30 June 2003 to 31 December 2003 to enable rectification of all punch List items and handing over of all spare parts and tools under Lot C.
2004	
9 January	Loan was closed. SDR117,723.16 ($174,933.08 equivalent) was cancelled, thereby reducing the loan amount to SDR4,951,276.84 ($6,477,094.37 equivalent).
1 October	ADB approved the Ministry of Finance and Treasury's request to reduce the relending rate to STELCO to 8% per annum effective 1 October 2004.
8–16 December	PCR mission fielded.

ADB - Asian Development Bank, Danida - Danish International Development Assistance, kV - kilovolt, MOFT - Ministry of Finance and Treasury, MOU - memorandum of understanding, NDF - Nordic Development Fund, PAC - project administration committee, SDR - special drawing rights, SLA - Special loan administration, STELCO - State Electric Company Ltd.
Source: State Electric Company Ltd.

SUMMARY OF CONTRACTS FINANCED BY ADB

PCSS No.	Contractor Supplier	Description	ADB Financed Amount	$ Equivalent
A.	**Category 01 – Civil Works (Part B)**			
0003	Bridge & Roof Co. (India) Ltd.	Civil Works	$2,467,290	2,467,290
			Total	**2,467,290**
B.	**Category 02 – Distribution Equipment and Supplies (Part C)**			
0004	Intertec Contracting A/S	11kV Switchgear and Distribution Equipment	DKR21,240,116	2,690,696
			Total	**2,690,696**
C.	**Category 03 – Consulting Services (Part D & E)**			
0001	Lahmeyer International, Gmbh	Consulting Services	$925,662	925,662
			Rf310,741	24,822
0002	Worley International, Ltd.	Consulting Services	$300,000	300,000
			Total	**1,250,484**
	Total Contracts Financed under the Loan			**6,408,470**

ADB = Asian Development Bank, DKR = Danish Kroner, Rf = Rufiyaa.
Source: State Electric Company Ltd.

PROJECTED AND ACTUAL DISBURSEMENTS
($ million)

Year	Projected at Appraisal	Projected at Project Implementation [a]	Actual
1997	0.000	0.000	0.000
1998	0.500	0.125	0.123
1999	1.300	0.525	0.355
2000	3.500	0.690	0.140
2001	1.700	1.075	1.754
2002		2.000	2.674
2003		1.000	1.181
2004		0.250	0.250
Total	**7.000**	**5.665**	**6.477**

[a] Projections as reflected in the Loan Financial Information System, Asian Development Bank.
Source: Asian Development Bank.

PLANNED AND ACTUAL IMPLEMENTATION SCHEDULE

Project Component/Activity		1997				1998				1999				2000				2001				2002				2003			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	II	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Part A	**Two 6,000 kW Diesel Generating Units**																												
	Engineering and Design																												
	Manufacturing and Transport																												
	Erection, Tests, Commissioning																												
	Variation Order No.1 Centralized Control System																												
Part B	**Civil Works for Diesel Power Plant**																												
	Engineering and Design																												
	Manufacturing and Transport																												
	Erection, Tests, Commissioning																												
Part C	**Distribution System**																												
	Engineering and Design																												
	Manufacturing and Transport																												
	Erection, Tests, Commissioning																												
Part D	**Implementation Consulting Services**																												
Part E	**Management Consulting Services**																												

= Appraisal

= Actual

PROJECT IMPLEMENTATION DELAYS

A. Overview

1. Although each contract included detailed specifications, definitions of the terminal points, and advice on information to be exchanged between the contractors at specified dates, and although further key dates were explicitly defined during a common contract negotiation meeting with the contractors of the three Lots, delays started to occur even during the early design and procurement phase of the Project. This was mainly because both contractors made a slow start on the design work.

2. To expedite the works, joint design and progress meetings were held in December 2000, February 2001, and late March 2001, all in addition to individual design meetings between the contractors and the consultant. By the end of March 2001, the contractors and the consultant were still confident that the Project would be completed in time. From April 2001 onwards, however, the delay of the Lot B increased constantly and drastically, mainly due to inadequate design capability of the contractor (for Lot B) regarding the elaboration of detailed design calculations and shop drawings. Furthermore, the prefabricated structural steel that arrived at the project site with a delay of about 3 months was of unacceptable quality as it had been damaged during transportation. This required extensive rectification work at the site.

3. In September 2001, Lot B works were delayed such that the Lot A contractor had to apply for an extension of time for the completion from December 2001 to May 2002 and claimed for additional cost. At the time when the Lot A claim was issued, the Lot A request for extension of time and additional cost was justified. However, during the extension period, in January 2002, the consultant discovered design deficiencies of both contractors regarding the stack supporting structure. The construction work (Lot B) in the related areas and the stacks (Lot A) had to be re-designed and strengthened. The responsibility for this deficiency remained with both contractors. The Lot B contractor's incapability to design and construct the seawater pump house pit, the intake system, and the noise reduction walls required extensive additional engineering by the consultant to correct the deficiencies. However, the consultant's special tasks in this regard could not prevent further delay.

3. Besides technical design meetings, progress meetings with the participation of the contractor's (for Lot B) management were held in March 2001, September 2001, November 2001, February 2002, March 2002, and May 2002 to expedite the work. The meeting in February 2002 was even held in the presence of ADB and MOFT representatives. During each meeting, revised time schedules were presented by the Lot B contractor. However, almost none of the dates were met. Based on the work program of May 2002, a completion date of 26 October 2002 for Lot A was expected.

4. Finally, the takeover certificate (TOC) no. 01 date for Lot A base contract was issued only on 23 November 2002, as the Lot A contractor could not meet the scheduled date due to technical deficiencies encountered during the final commissioning period. At that time it was the STELCO/engineering consultant view that due to an internal dispute between the contractors, they refused to delegate an adequate number of qualified experts to the project site. The TOC 01 did not cover the scope of work allocated to the variation order (VO) no. 1 (Central Control System). The completion of punch list items related to TOC 01 and the completion of works related to VO 01 were then seriously delayed by the consequences resulting from the bankruptcy of the contractor for Lot A and Lot C in May 2003. Finally, the TOC 02 for Lot A,

VO1 was issued only on 5 August 2003, but completion of punch list items is continuing until date.

5. The TOC date for Lot B was 31 December 2002. The punch list items were completely rectified in April 2003.

6. Lot C was delayed by the contractor for several months and was taken over on 28 June 2002. Soon after the takeover, a failure occurred at a 11kV circuit breaker; this was rectified only after more than 1 year, due to an internal dispute between the contractor and the manufacturer of the 11kV switchgear.

B. Claims

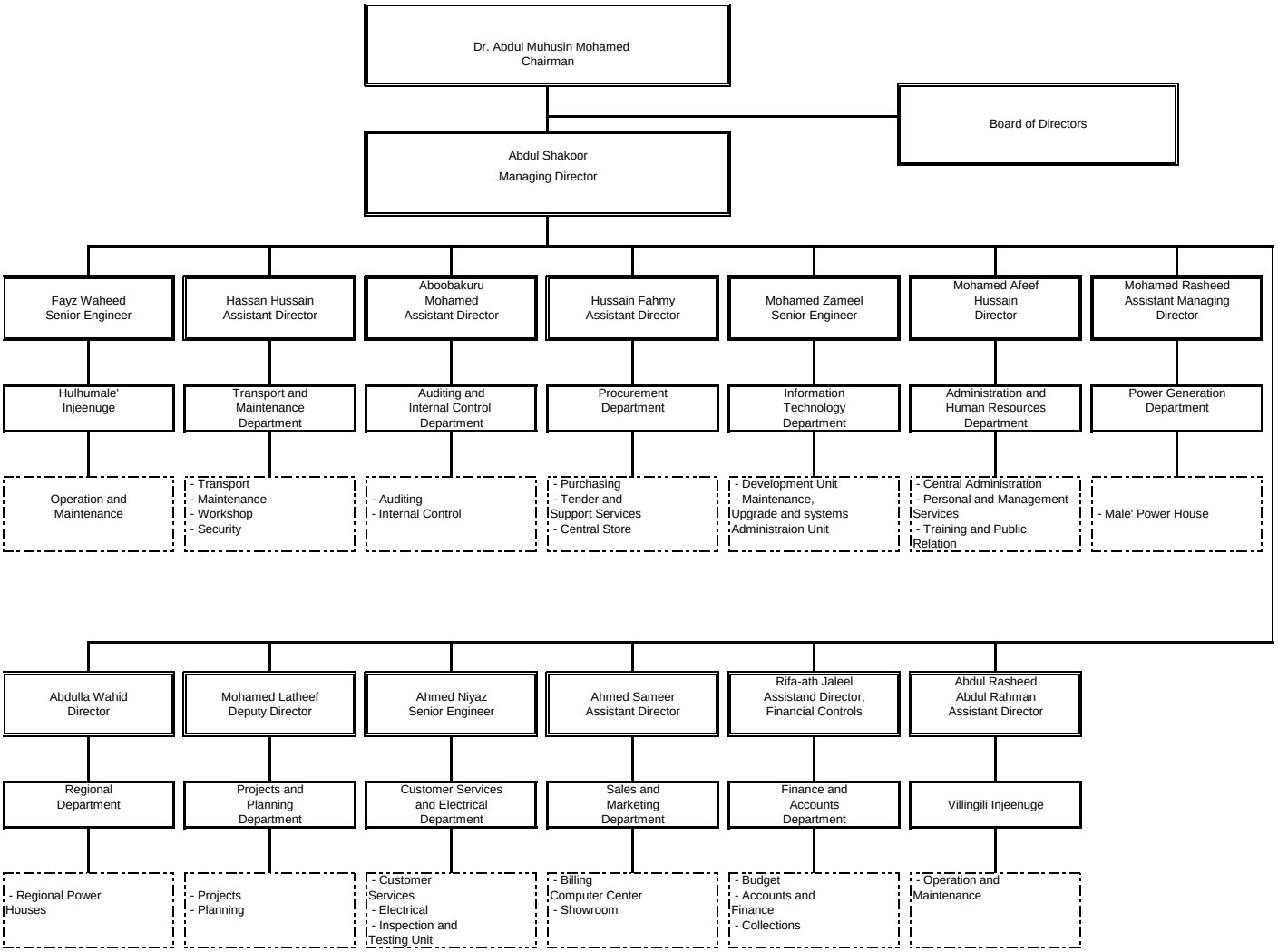
7. The contractors for the three Lots issued claims for additional works and extension of time. STELCO also issued claims to the contractors regarding liquidated damages for delay.

8. For Lot B, the matter was mutually agreed following a meeting between STELCO/the engineering consultant and the contractor (for Lot B) in March/April 2003, resulting in the agreement of VO 08 and liquidated damages of 3% for delay. Between January 2003 and May 2003, the Lot A and Lot C contractor repeatedly increased the scope and amount of his claims. The final amount of claims was EURO 2,090,000. The majority of claims had not been agreed to by the consultant for technical and contractual reasons, and a claim for liquidated damages due to delay in completion was raised by STELCO. Since the contractor for Lot A and Lot C refused an amicable settlement of the claims, the formation of a Dispute Adjudication Board had already started in October 2002. During a meeting on 1 May 2003 between STELCO and the contractor, an amicable agreement to settle the Lot A and Lot C contracts was achieved in all technical and contractual aspects.

C. The Consulting Firm’s Bankruptcy

9. Shortly after the amicable settlement of the Lot A and Lot C dispute on 28 May 2003, the contractor for Lot A and Lot C advised that they had been forced on 14 May 2003 to apply to the Danish Court for an administration order pursuant to the Danish Bankruptcy Act. Furthermore, the contractor requested a transfer of the contracts for Lot A and Lot C to the newly formed company. After thorough consideration of the matter by the Maldives authorities, STELCO, and the engineering consultant, including a number of meetings, the STELCO Board decided to request the contractor for Lot A and Lot C to ask the Banks holding the performance guarantees to transfer them to the newly formed company to enable a transfer of the contracts. After the Banks had confirmed their agreement and executed the transfer, the Lot A and Lot C contracts were transferred to the newly formed company by Memorandum of Understanding of 5 August 2003. This Memorandum also included a number of new dates for completion of outstanding works, however, none of these was met.

ORGANIZATION CHART OF STELCO



STATUS OF COMPLIANCE WITH LOAN COVENANTS

Covenant	Reference in Loan Agreement	Status of Compliance
A. Execution of the Project		
(i) Project Execution		
1. The Board of Directors of STELCO shall be responsible for overall Project implementation, and may delegate specified duties in Project implementation to STELCO's Managing Director, who shall be assisted in day-to-day implementation by a Project Director. The Managing Director shall also act as the liaison between the Borrower, STELCO and the Bank. The Deputy Director maintaining separate records and accounts of the Project. In implementing the Project, STELCO shall be assisted by Project consultants.	Loan Agreement (LA), Sched. 6, para. 1	Complied with.
(ii) Environmental Matters		
2. With the assistance of Project consultants, the Borrower shall ensure that STELCO designs, constructs, operates and maintains the Project pursuant to satisfactory design such as nuisance caused by noise, vibration, oil spillage and exhaust emission. In particular, STELCO shall ensure that total noise levels from the complete power plant, after the Project is completed and in operation, do not exceed 60 decibels (dB(A)) at the school buildings nearest the power plant; that Project emission stacks have a minimum height of 30 meters; and that spillage and fire risks in the handling and storage of fuel oil are minimized.	LA, Sched. 6, para 2(a)	Complied with. STELCO built walls to minimize noise levels; emission stacks have met the minimum height requirement; preventive mechanisms in case of spillage and fire have been set up.
3. Except as the Borrower and Bank may otherwise agree, the Borrower shall ensure that STELCO retires within three years of the Effective Date the old diesel generating units located a the old power plant in the center of Male.	LA, Sched. 6, para. 2(b)	Complied with. The old diesel generating units were completely retired and replaced by the new generation units.

Covenant	Reference in Loan Agreement	Status of Compliance
B. Financial Covenants		
(i) Operating Ratio		
4. Except as otherwise agreed between the Borrower and the Bank, the Borrower and STELCO shall take all necessary measures to ensure that the ratio of STELCO's total operating expenses to operating revenues does not exceed 0.9 for each fiscal year.	LA, Sched. 6, para. 3(a)	Complied with. Operating ratio was: 0.3 for FY1998 0.3 for FY1999 0.5 for FY2000 0.5 for FY2001 0.5 for FY2002
(ii) Debt-Service Ratio		
5. Except as otherwise agreed between the Borrower and the Bank, STELCO shall maintain its net revenues for each fiscal year at least 1.3 times the debt service requirements for each fiscal year.	LA, Sched. 6, Para. 4	Complied with. Debt- service ratio was: 1.6 for FY1998 3.0 for FY1999 3.1 for FY2000 2.8 for FY2001 1.9 for FY2002
(iii) Tariff Adjustments		
6. The Borrower shall cause STELCO to take all necessary actions to make timely adjustments in its tariffs as shall be necessary to reflect increases in STELCO's costs and to enable STELCO to achieve a rate of return after payment of taxes of at least eight % on average revalued net fixed assets in service. The Borrower shall also take all necessary measures to ensure that any regulatory body which it establishes, such as the proposed Maldives Power Council, permits this rate of return.	LA, Sched. 6, Para. 5	Complied with. Rate of return was: 21% for FY1998 19% for FY1999 14% for FY2000 12% for FY2001 27% for FY2002 Revaluation of fixed assets was not undertaken and is scheduled for 2005. However, inflation has averaged low, at 0.4% during 1998–2003.
(iv) Payment of Cash Dividend or Remittance to the Borrower.		
7. STELCO shall not pay any cash dividend or remittance to the Borrower out of net profit or other undistributed profits accumulated by STELCO if after such payment STELCO shall be in violation of any of the Bank's financial covenants or be unable to finance at least 40 % of the three-year moving average of total investment requirements for STELCO's capital	LA, Sched. 6, Para. 6	Complied with (except in FY1998). Special Funds resources were: 25% for FY1998 76% for FY1999 70% for FY2000 47% for FY2001

Covenant	Reference in Loan Agreement	Status of Compliance
expenditure program. If annual net earnings are in excess of this 40% level, a share of the additional earnings, as determined by the Borrower, may be paid to the Borrower as dividends.		37% for FY2002 40% minimum requirement was relaxed to 30% in FY2002.
(v) Reduction of Accounts Receivable and Payable		
8. The Borrower and STELCO shall ensure that the total of STELCO's accounts receivable does not exceed the equivalent of STELCO's sales revenue for two months by the end of Fiscal Year 1998 and each Fiscal Year thereafter.	LA, Sched. 6, Para. 7(a)	Complied with. Accounts receivable were: 2.1 months for FY1998 1.8 months for FY1999 1.0 months for FY2000 0.4 months for FY2001 0.6 months for FY2002
9. STELCO shall continue to charge two % per month on accounts overdue more than 10 days after the payment due date. Without affecting the generality of Section 2.08 of the Project Agreement, STELCO shall furnish, commencing with Fiscal Year 1998, to the Bank semi-annual reports analyzing STELCO's accounts receivable and an annual analysis of the aging of all significant accounts receivable.	LA, Sched. 6, Para. 7(a)	Not complied with. Semi-annual reports were not submitted to ADB.
10. STELCO shall take all necessary measures to maintain its accounts payable at a level not more than the equivalent of two months of cash operating expenses.	LA, Sched. 6, Para. 7(b)	Not complied with in FY1998-FY2000. 2.5 months for FY1998 3.8 months for FY1999 2.2 months for FY2000 0.7 months for FY2001 0.3 months for FY2002
C. Institutional Strengthening of STELCO		
11. The Borrower and STELCO shall take all necessary measure to implement the agreed upon Action Plan to improve the Management of STELCO, including the following:	LA, Sched. 6, Para. 8	Complied with.
12. Assist with such implementation, recruit and mobilize management consultants financed under the Loan within six months of the Effective Date;	LA, Sched. 6, Para. 8(i)	Complied with late.

Covenant	Reference in Loan Agreement	Status of Compliance
13. Prepare each year a Five Year Corporate Plan (Plan), describing STELCO's expected financial performance concerning income statement, balance sheet, and sources and applications of funds for the next five years, its plans for generation and distribution expansion on Male and in the outer islands, its plans for financing this expansion, its plans for continuous management improvements, for training and staff development, and the like. STELCO shall annually provide a copy of this Plan to the Bank for comment;	LA, Sched. 6, Para. 8(ii)	Complied with late. A 3-year corporate plan was submitted in 2000. The 5-year corporate plan was prepared in 2003 but not updated in 2004. A new corporate plan is being prepared in 2005.
14. Prepare a detailed annual budget (Budget) describing its planned operating expenditures, planned investments, expected revenues, and expected financial performance for the forthcoming year;	LA, Sched. 6, Para. 8(iii)	Complied with.
15. Implement a management information system, which includes monthly reports describing its performance in all important financial and physical aspects, and compare this with Plan and Budget targets. In cases where there are serious deviations from the Plan or Budget, STELCO shall prepare an action plan to correct the problem or to make adjustments in the Budget or Plan;	LA, Sched. 6, Para. 8(iv)	Complied with.
16. Prepare an annual report describing STELCO's activities and financial accounts. This annual report shall be reviewed and approved by STELCO's board, and the Borrower's Ministry of Finance and Treasury;	LA, Sched. 6, Para. 8(v)	Complied with.
17. Appoint a Board of Directors with members who collectively have experience in government, business management, finance, engineering and law;	LA, Sched. 6, Para. 8(vi)	Complied with. The Board of Directors consists of representatives from the outlined professions except for a lawyer.
18. Appoint a Manager of Human Resources, and sponsor specialized training for that person if necessary. Also prepare a training and staff development program, to be described in a report to be furnished to the Bank for comment, which shall be updated annually or more frequently if necessary;	LA, Sched. 6, Para. 8(vii)	Complied with.

Covenant	Reference in Loan Agreement	Status of Compliance
19. STELCO's total staff training budget shall be at least one % of its annual revenues;	LA, Sched. 6, Para. 8(viii)	Partially complied with. The actual total training budget for FY2000-2002 averaged 0.9% of annual revenue. The projected training budgets for FY2003-2007 are 0.5% of projected annual revenue. Because of strong revenues, if 1% was spent on training, staff would constantly be in training and no work would be done.
20. Develop and implement a salary, bonus and benefits package for STELCO's staff, with emphasis on professional staff and managers;	LA, Sched. 6, Para. 8(ix)	Complied with.
21. Appoint at least two chartered accountants to report to the Managing Director as full-time staff, including a chartered accountant with at least ten years of experience;	LA, Sched. 6, Para. 8(x)	Complied with in principal. An expatriate CPA was appointed in 1996 and was replaced by a STELCO staff member who became a certified CPA in 2001. STELCO currently has two accountants with master's degrees, three accountants with degrees, and two staff members undergoing professional accounting courses overseas.
22. Establish within six months of the Effective Date a proper materials management system, with a computer-based inventory control system; and	LA, Sched. 6, Para. 8(xi)	Complied with late.
23. Within six months of the Effective Date, STELCO's procurement processing shall be removed from the supervision of its Director of Finance and Accounts and placed in a separate department.	LA, Sched. 6, Para. 8(xii)	Complied with.
D. Privatization		
24. The Borrower shall, in the event the Borrower decides to sell shares in STELCO to private investors, or to provide an operating	LA, Sched. 6, Para. 9	Not applicable To date, no privatization is anticipated.

Covenant	Reference in Loan Agreement	Status of Compliance
concession or other management agreement for private parties to use STELCO's facilities in Male, consult, in adequate time before any final decision is taken, with the Bank regarding such plans for privatization and subsequently inform the Bank concerning the proposed sale, concession or management agreement as well as the use of the proceeds of such sale or concession, to ensure that mutually acceptable objectives are achieved.		
Extraordinary Events	LA, Sched. 6, Para. 10 LA, Sched. 6, Para. 11	Not applicable

DETAILS OF THE DECREASE OF THE SELF-FINANCING RATIO COVENANT

1. In 2002, the Ministry of Finance and Treasury (MOFT) sought the relaxation of the self-financing ratio's (SFR's) minimum 40% requirement. The Asian Development Bank (ADB) endorsed the relaxation, based on the following rationale:

(i) The Covenant was based on the assumption that even with STELCO retaining enough earnings to maintain a self-financing ratio (SFR) of 40%, the Government would retain 10% of STELCO's net earnings as income taxes.

(ii) Government was planning to introduce corporate income tax in 1997/98 and would receive 10% as dividends. This would provide the Government with dividends close to the historic figure of 24% before the Loan. The projections are presented in Table 5 of Appendix 9 of the report and recommendation of the President (RRP). However, the income tax was never introduced, and the Government is already short 10% in its revenues from STELCO.

(iii) A related covenant [Loan Agreement Schedule 6, Para 8 (ii)] required STELCO to "prepare each year a Five Year Corporate Plan (Plan), describing STELCO's expected financial performance concerning income statement, balance sheet, and sources and applications of funds for the next 5 years, its plans for generation and distribution expansion on Male and in the outer islands, for financing this expansion, for continuous management improvements, for training and staff development, and the like. STELCO shall annually provide a copy of this Plan to the bank for comment." STELCO did not submit such a plan to ADB and ADB never requested it.

(iv) There appears to be a discrepancy between the RRP and the Loan Agreement. Para. 68 of the RRPrequires the Government to allow STELCO to "retain all earnings up to the level required for a 40% self-financing ratio," while the Schedule 6, Para. 6 of the Loan Agreement requires that "STELCO shall not pay any cash dividend or remittance … if after such payment STELCO shall be … unable to finance at least 40% of the three year moving average of total investment required for STELCOs capital expenditure program."

2. STELCO's capital expenditures expanded significantly because of the following:

(i) STELCO had built a Rf 73 million ($6.2 million) headquarters building as part of its capital expenditures and financed over 3 years, thus significantly increasing its capital expenditure budget.

(ii) Capital expenditures have also increased over the past several years because of requests from the Government for STELCO to undertake specific projects, such as outer island electrification and the development of Hulhumale.

3. The SFR calculations pursuant to the Loan Agreement were difficult and misleading at best, since STELCO did not have a FiveYear Corporate Plan. It only had a national 5-year capital expenditure budget. The budgeted amounts are ad-hoc and not based on historic levels or on real projected growth in electricity demand and a corresponding capital expenditure projection. A detailed budget is set annually by the Board of Directors, based on projected priorities for the year.

4. When STELCO calculates its dividends, it averages the capital expenditures of the previous year (actual), current year (projected) and following year (projected) to get the 3-year moving average, then retains 40%. This number is then subtracted from the net profits for the

year. The profit left over, if any, is then available to be paid out as dividends. This model is flawed unless it is viewed in relation to a FiveYear Corporate Plan, with a capital expenditure program that is tied to systems expansion and based on real projected growth of demand for electricity. If not, then any number can be “plugged in” to inflate future capital expenditures (i.e., the projected numbers for the current year and following year of the 3-year moving average), thus inflating the 3-year moving average. As such, the resulting 40% to be withheld ends up as a very large number, resulting in little or no dividends. In addition, if the capital expenditure program is not tied to revenue-earning capital expenditures, as is clearly the intention in the FiveYear Corporate Plan, any expenditure, even nonrevenue earning expenditures, can also be included in the capital expenditure program. This is currently the case, as the new STELCO building has artificially inflated STELCO’s capital expenditures, resulting in very little dividends to the Government in 2000. The mission also found that because the projected figures of the 3-year moving average are inflated, retaining 40% of the 3-year moving average has allowed STELCO to self-finance a high percentage of its capital expenditures.

MALÉ ELECTRICITY TARIFFS
State Electricity Company Limited

Malé and K. Villingili	Tariff Rate Changes					
	1990 - 04 April 2002		4 April 2002 (reduced Rf 0.10)		31 October 2003 (reduced Rf 0.15)	
	<= 200 Units	> 200 Units	<= 200 Units	> 200 Units	<= 200 Units	> 200 Units
Business	3.50	4.00	3.40	3.90	3.25	3.75
Domestic	2.00	2.50	1.90	2.40	1.75	2.25
Government	2.50	3.00	2.40	2.90	2.25	2.75
Government School	2.50	3.00	2.40	2.90	2.25	2.75
Business Special	3.50	4.00	3.40	3.90	3.25	3.75
Private School	2.50	3.00	2.40	2.90	2.25	2.75
Lamp	2.50	3.00	2.40	2.90	2.25	2.75
Special Tariff	0.00	0.00	2.50	2.50	2.35	2.35

Source: State Electric Company Ltd.

Other Islands	Tariff Rate Changes					
	1990 - 04 April 2002		On 04th April 2002 (reduced Rf 0.10)		On 31st October 2003 (reduced Rf 0.15)	
	<= 30 Units	> 30 Units	<= 30 Units	> 30 Units	<= 30 Units	> 30 Units
Dhidhdhoo	2.50	4.00	2.40	3.90	2.25	3.75
Eydhafushi	2.50	4.00	2.40	3.90	2.25	3.75
Fuahmulah	2.50	4.00	2.25	3.90	2.25	3.75
Gadhdhoo	2.50	4.00	2.40	3.90	2.25	3.75
Guraidhoo	2.50	4.00	2.40	3.90	2.25	3.75
Hanimaadhoo	2.50	4.00	2.40	3.90	2.25	3.75
Himmafushi	2.50	4.00	2.40	3.90	2.25	3.75
Hinnavaru	2.50	4.00	2.40	3.90	2.25	3.75
Hithadhoo (CPS)	2.50	3.75	2.40	3.65	2.25	3.50
Hoarafushi	2.50	4.00	2.40	3.90	2.25	3.75
Hulhudhoo / Meedhoo	2.50	4.00	2.40	3.90	2.25	3.75
Hulhudhuffaaru	2.50	4.00	2.40	3.90	2.25	3.75
Kaashidhoo	2.50	4.00	2.40	3.90	2.25	3.75
Kudhahuvadhoo	2.50	4.00	2.40	3.90	2.25	3.75
Kulhudhuffushi	2.50	3.00	2.40	2.90	2.25	2.75
Maafushi	2.50	4.00	2.40	3.90	2.25	3.75
Milandhoo	2.50	4.00	2.40	3.90	2.25	3.75
Naifaru	2.50	4.00	2.40	3.90	2.25	3.75
Thinadhoo	2.50	3.75	2.40	3.65	2.25	3.50
Thulusdhoo	2.50	4.00	2.40	3.90	2.25	3.75
Thuraakunu	2.50	4.00	2.40	3.90	2.25	3.75
Velidhoo	2.50	4.00	2.40	3.90	2.25	3.75
Villinigili	2.50	4.00	2.40	3.90	2.25	3.75

Source: State Electric Company Ltd.

Note: All Categories (Business, Domestic, Government, Government School, Business Special, Private School) are billed at the same rate in the islands.

FINANCIAL STATEMENTS

1. STELCO's financial statements were obtained to examine the overall financial performance of STELCO from FY1998 to FY2002. Audited financial statement for FY2003 were not yet available at the time the project completion mission was fielded. Therefore, FY2002 is used as the base year for all calculations. However, the unaudited FY2003 financial statement is included for reference. An income statement, a balance sheet, and a cash flow statement are shown in Tables A10.1-3. The income statement indicates that STELCO is financially very strong and highly profitable. The rate of return (ROR) on revalued assets[1] during the implementation period was significantly higher than the covenanted minimum requirement of 8%, averaging 19% during FY1998-2002. Its gross margin for FY1998 stood as high as 72% and averaged 50% from FY2000 to FY2002 and its profit margin averaged 25% during the same period. High tariffs were the main contributor to its strong financial performance, even though the tariff rates were not increased over the years. In fact, STELCO's tariff levels were reduced in 2002 and 2003 by a total of 10%. The breakdown of tariffs is summarized in Appendix 9. Another reason for STELCO's strong financial performance is that electricity sales have grown an average of 12% per annum over the FY1998–FY2002 period. Future prospects for its strong financial position are expected to be weaker due to projected increases in fuel costs with no effective hedging mechanism in place for offsetting fuel price volatility.

2. The balance sheet shows that accounts receivable (months) were satisfactory as stipulated in the Loan Agreement. However, accounts payable (months) were satisfactory only in FY2001-FY2002. The FY2000 audit was done a year late and was done along with the 2001 audit. In the FY2001 audit, PricewaterhouseCoopers found inconsistencies and overstatement of accounts payable by the previous auditor[2] and therefore, the audited financial statement in FY2001 was restated. Although liquidity ratios were not part of the covenants, the current ratio and the quick ratio are presented in the Table A10.2. The figures show that the company maintains sufficient working capital to meet its current obligations on time. The covenanted self-financing ratio (SFR) was successfully met from FY1999 to 2001. However, the SFR for FY2002 was 37%, slightly below the minimum requirement of 40%. This was allowed, because ADB approved a request by MOFT to reduce the SFR from 40% to 30% in 2002 (see Appendix 8). The debt service coverage ratio of minimum 1.3 times was successfully met throughout the implementation period by STELCO.

3. Under the Project Agreement, STELCO must furnish ADB with audited financial statements no later than 6 months after the close of each fiscal year. The submission of audited financial statements was delayed each fiscal year. All audited statements received by ADB were qualified, with no adverse comments from the Government auditor's office. However, in FY2001, the audited financial statement contained over fifteen qualifications. ADB provided a staff consultant to rectify issues raised by the auditor, mainly derived from lack of information and difficulty of record retrieval; rectify the fifteen qualifications of the auditors; and) install a new accounting system. The qualifications were reduced to three. They were mainly related to STELCO's asset management, such as having too many slow-moving spare parts in stock. The FY2002 audited financial statement stated significant improvement, with only one qualification outstanding. The audit of FY2003 accounts is still in progress, due to problems with migrating data associated with the introduction of new billing software.

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[1] STELCO is planning to revalue assets in 2005. The book value of fixed assets was used to calculate ROR. The revaluing of fixed assets was deemed not significant due to low inflation in the country.

[2] Ernst & Young was STELCO's auditor until 1999. PricewaterhouseCoopers was retained as the auditor from FY2001.

4. The key factors that will affect the future financial performance of STELCO include electricity tariff, fuel price, and generation capacity to service its growing consumption. STELCO raised concerns with regard to increasing fuel prices, since STELCO's operational performance is highly sensitive to rises in oil prices and currently does not have an effective measure to manage the fuel price fluctuations. STELCO purchases fuel from the State Trading Organization (STO), a Government entity supplying all of STELCO's fuel needs. The fuel purchase price peaked at Rf5.90/liter, equivalent to $0.46/liter, in October 2004 from Rf 4.64/liter, equivalent to $0.36/liter, in February 2004--a 27% increase within a year.

Table A10.1: Income Statement
(Rf)

	1998	1999	2000	2001	2002	Unaudited 2003[a]
Sales	230,371,397	251,637,482	274,140,177	328,736,346	346,433,242	374,564,022
Electricity Sales	218,811,322	239,184,706	263,418,950	316,619,013	328,858,028	360,875,208
Non-Electricity Sales	11,560,075	12,452,776	10,721,227	12,117,333	17,575,214	16,018,910
Cost of Sales	63,450,293	73,406,259	136,755,860	176,265,854	169,068,467	201,563,607
Fuel Cost	65,538,377	61,430,849	103,760,069	124,683,184	137,701,200	151,772,022
Other[b]	2,088,084	11,975,410	32,995,791	51,582,670	31,367,267	49,791,585
Gross Profit	166,921,104	178,231,223	137,384,317	152,470,492	177,364,775	173,000,415
Other Operating Income	0	0	531,667	4,989,300	2,630,510	2,240,780
Other Operating Expense	94,871,458	106,389,561	79,560,347	107,768,872	77,629,757	88,394,714
Depreciation	41,056,172	53,457,978	48,495,806	81,415,551	30,834,279	49,246,714
Administration and Overhead Costs	53,815,286	52,931,583	31,064,541	26,353,321	46,795,478	39,148,000
Operating Profit	72,049,646	71,841,662	58,355,637	49,690,920	102,365,528	86,846,481
Interest Income	0	0	0	99,107	1,409,803	0
Interest Expense	18,100,657	18,869,325	18,298,729	22,578,926	32,303,667	33,149,909
Other Non-Operating Items	8,167,379	0	0	0	0	0
Net Profit	62,116,368	52,972,337	40,056,908	27,211,101	71,471,664	53,696,572
Gross Margin (% of sales)	0.72	0.71	0.50	0.46	0.51	0.46
Operating Margin (% of sales)	0.31	0.29	0.21	0.15	0.30	0.23
Operating Ratio	0.28	0.29	0.50	0.54	0.49	0.54
Rate of Return (%)	21	19	14	12	27	17

[a] 2003 figures are unaudited

[b] negative cost of sales results from the inaccuracies in the opening stock

Source: State Electric Company Ltd.

Table A10.2: Balance Sheet
(Rf)

	1998	1999	2000	2001	2002	Unaudited 2003
Assets						
Non-current Assets						
Net Property, Plant and Equipment	379,778,486	391,376,376	419,129,341	377,962,133	373,988,668	629,496,266
Capital Work-in-Progress	8,238,722	35,267,486	37,113,609	139,621,986	228,323,064	12,611,734
	388,017,208	426,643,862	456,242,950	517,584,119	602,311,732	642,108,000
Current Assets						
Inventories	48,183,200	54,180,821	67,872,536	87,637,370	83,643,886	73,522,581
Receivables and Prepayments	39,850,089	43,893,488	29,793,696	23,687,089	27,592,952	19,046,966
Cash and Cash Equivalents	25,332,902	15,919,424	17,992,113	33,007,764	16,936,990	52,344,400
	113,366,191	113,993,733	115,658,345	144,332,223	128,173,828	144,913,947
Total Assets	**501,383,399**	**540,637,595**	**571,901,295**	**661,916,342**	**730,485,560**	**787,021,947**
Equity and Liabilities						
Non-current Liabilities						
Long Term Borrowings	206,941,962	200,893,814	193,078,556	279,094,968	307,396,013	301,725,966
Current Liabilities						
Trade and Other Payables	16,494,077	52,878,694	41,172,123	41,837,978	20,378,921	30,989,301
Borrowings	36,090,089	16,392,294	16,392,294	17,513,973	22,769,539	38,137,104
	52,584,166	69,270,988	57,564,417	59,351,951	43,148,460	69,126,405
Capital and Reserves						
Ordinary Shares	54,117,886	150,000,000	150,000,000	150,000,000	150,000,000	150,000,000
Retained Earnings	187,739,385	120,472,793	171,258,322	173,469,423	229,941,087	266,169,576
	241,857,271	270,472,793	321,258,322	323,469,423	379,941,087	416,169,576
Total Equity and Liabilities	**501,383,399**	**540,637,595**	**571,901,295**	**661,916,342**	**730,485,560**	**787,021,947**
Current Ratio	2.16	1.65	2.01	2.43	2.97	2.10
Quick Ratio	1.24	0.86	0.83	0.96	1.03	1.03
Long-term Debt: Equity	0.86	0.74	0.60	0.86	0.81	0.73
Accounts Receivable (months)	2.06	1.82	0.98	0.44	0.64	0.57
Accounts Payable (months)	2.46	3.79	2.67	0.67	0.33	0.96

1. Current ratio: ratio of current assets to current liabilities;
2. Quick ratio: ratio of current assets minus inventory to current liabilities, indicating STELCO's strong cash position.
Source: State Electric Company Ltd.

Table A10.3: Cash Flow Statement
(Rf)

	1998	1999	2000	2001	2002	Unaudited 2003
Operating Activities						
Net Profit	62,116,368	52,972,337	40,056,908	27,211,101	71,471,664	53,696,572
Adjustments for:						
Depreciation	41,056,172	53,457,978	48,495,806	81,415,551	30,834,279	49,246,714
Others	10,454,706	18,869,325	18,298,729	22,479,819	30,893,864	33,149,909
Changes in Working Capital	10,428,610	3,354,198	1,940,209	17,276,850	6,371,437	30,003,635
Trade and Other Receivables	895,209	4,043,399	14,099,792	6,106,607	3,905,863	8,545,986
Inventories	17,738,614	5,997,621	13,691,715	19,764,834	3,993,484	10,121,305
Payables	8,205,213	6,686,822	1,532,132	3,618,623	6,459,058	11,336,344
Cash Generated from Operations	103,198,636	121,945,442	108,791,652	113,829,621	126,828,370	166,096,830
Interest Paid	18,100,657	18,869,325	17,252,954	22,578,926	32,303,667	33,149,909
Net Cash from Operating Activities	85,097,979	103,076,117	91,538,698	91,250,695	94,524,703	132,946,921
Investing Activities						
Purchase of Property, Plant and Equipr	66,876,838	23,305,074	81,650,751	15,289,697	17,690,519	15,239,147
Capital Work-in-Progress	20,033,900	71,036,373	0	127,467,023	97,871,373	74,529,799
Interest Received	0	0	0	99,107	1,409,803	0
Net Cash from Investing Activities	86,910,738	94,341,447	81,650,751	142,657,613	114,152,089	89,768,946
Financing Activities						
Repayment of Borrowings	19,726,354	6,048,148	9,741,135	16,558,534	22,769,539	22,769,539
Dividend Paid	27,000,000	20,000,000	0	20,715,522	30,000,000	15,000,000
Proceeds from Borrowings	40,129,115	0	1,925,877	103,696,625	56,326,151	29,998,974
Government Capital Contribution	0	7,900,000	0	0	0	0
Net Cash from Financing Activities	6,597,239	18,148,148	7,815,258	66,422,569	3,556,612	7,770,565
Increase in Cash and Cash Equivalents	8,409,998	9,413,478	2,072,689	15,015,651	16,070,774	35,407,410
Movement in Cash and Cash Equivalents						
Beginning	33,742,900	25,332,902	15,919,424	17,992,113	33,007,764	16,936,990
Increase	8,409,998	9,413,478	2,072,689	15,015,651	16,070,774	35,407,410
At End of Year	25,332,902	15,919,424	17,992,113	33,007,764	16,936,990	52,344,400

Source: State Electric Company Ltd.

FINANCIAL EVALUATION

A. General

1. The methodology and assumptions for recalculation of financial internal rate of return (FIRR) followed those used at appraisal. Incremental revenues and costs resulting from the Project were determined to arrive at cash flow stream for the period 1998 to 2022 based on 20 years of project life, starting from 2002 after the completion of the Project. All costs and benefits in the analyses were based on constant 2002 prices. The Manufacturing Unit Value Index (MUV) published by the World Bank was used for converting costs and benefits into 2002 prices.

2. The financial sustainability of the Project was re-evaluated by comparing the weighted average cost of capital (WACC) to the project FIRR. The WACC was re-estimated at 9% in real terms derived from the actual capital mix comprising of Asian Development Bank (ADB), Nordic Development Fund (NDF), Danish International Development Assistance (Danida) and State Electric Company Ltd. (STELCO). Actual interest costs of loan funds were considered, while the cost of equity was assumed to be 12%. Income tax equivalent to 10% was assumed and domestic inflation was assumed at 0.9% per annum.

B. Costs

3. The project costs were derived from the actual capital costs up to project completion. 2003 project costs were adjusted to 2002 constant prices. The main project costs included (i) capital costs of mechanical and electrical supplies, civil works, distribution equipment, consultancy services, and management consultancy; (ii) incremental operating and maintenance costs; (iii) incremental fuel costs; and (iv) incremental administrative and overhead costs.

C. Benefits

4. The same methodology and assumptions used at appraisal were adopted for the estimation of incremental benefit of the Project. The financial benefits for the Project consisted of incremental electricity generation from the capacity expansion from the installation of two new generation units of 6.5 megawatt (MW) each. Incremental benefits were re-assessed by multiplying the incremental sales by the annual average tariff revenue per kilowatt-hour (kWh).

5. Actual electricity tariffs up to 2003 were used and adjusted to constant 2002 prices. The annual average tariff per kWh was calculated for four major categories of consumer: domestic, business, government, and others in Malé. The market shares of total energy sold for these consumer groups were 50%, 29%, 19% and 2%, respectively. The average weighted tariff was estimated at Rf2.55/kWh or about $0.20/kWh. This average rate was applied to project incremental tariff from the Project.

6. The mature rate of Project generation was re-estimated to produce about 90,000 megawatt-hour (MWh)[1] per year; 66,000MWh per year is used to supply new load in Malé. Male has a total installed capacity of about 30MW in Malé and 2004 maximum demand was 20MW. This capacity will be reached in 2-3 years due to rapid demand growth in Malé.

[1] The MWh per year was recalculated using a load factor of 0.8.

D. FIRR

7. The FIRR for the Project was recalculated at 13%. The FIRR compares favorably with the revised weighted average cost of capital of 9.0%. Based on the calculation, the Project is considered to be financially viable. The FIRR is lower than the appraisal estimate at 21.7% because of the increased in costs, i.e., higher fuel cost; operation and maintenance (O&M), administration, and overhead costs; and the implementation delays. The financial net present value (FNPV), discounted at the WACC resulted in $5.3 million. The FIRR of the Project is presented in Table A11.1.

Table A11.1: Financial Internal Rate of Return
Costs and Revenues in $1,000 in 2002 Constant Price

Year	Capital Cost	O&M Cost	Fuel Cost	Admin Cost	Total Costs	Incremental Generation (MWh)	Incremental Sales (MWh)	Incremental Sales Revenue	Total Benefit	Net Benefit
1998	217	0	0	0	217	0	0	0	0	-217
1999	247	0	0	0	247	0	0	0	0	-247
2000	2,187	0	0	0	2,187	0	0	0	0	-2,187
2001	11,913	0	0	0	11,913	0	0	0	0	-11,913
2002	5,686	326	1,219	414	7,646	14,260	13,404	2,671	2,671	-4,975
2003	2,147	1,173	5,644	1,918	10,882	66,000	62,040	12,363	12,363	1,481
2004	2,083	1,173	5,644	1,918	10,818	66,000	62,040	12,363	12,363	1,544
2005	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2006	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2007	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2008	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2009	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2010	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2011	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2012	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2013	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2014	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2015	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2016	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2017	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2018	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2019	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2020	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2021	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
2022	0	1,173	5,644	1,918	8,735	66,000	62,040	12,363	12,363	3,628
Total	**24,480**	**23,782**	**114,100**	**38,775**	**201,136**	**1,334,260**	**1,254,204**	**249,923**	**249,923**	**48,787**
NPV @ 9%	16,650	10,121	48,386	16,443	69,747	565,820	531,871	105,985	75,082	5,335
									FIRR	**13%**

Admin - Administrative, FIRR - financial internal rate of return, MWh - megawatt-hour, NPV - net present value, O&M - Operations and Maintenance.
Source: Asian Development Bank staff estimates.

ECONOMIC EVALUATION

A. General

1. The methodology and assumptions for recalculation of economic internal rate of return (EIRR) followed those used at appraisal. Incremental economic benefits and costs resulting from the Project were determined to arrive at cash flow stream for the period 1998–2022, based on 20 years of production starting from 2002 after the completion of the Project. The economic analysis was conducted using 2002 constant prices. The Manufacturers' Unit Value Index (MUV), published by the World Bank was used for converting costs and benefits into 2002 prices to revalue foreign expenditures and used the domestic inflation to revalue local currency expenditures.

2. The costs and benefits of the nontraded components were converted to the world price numeraire by using a standard conversion factor of 0.90.

B. Project Costs

3. The Project comprised two new diesel generating units in Malé of 6.5MW, higher than the original 5.79MW at appraisal. All the incremental costs were converted to 2002 prices. Fixed operation and maintenance (O&M) costs were re-estimated at $48/kW per annum; variable O&M costs at $0.01/kWh; diesel fuel and lubricating oil costs at $0.077/kWh; and average general administration and overhead cost of $0.03/kWh sold at economic prices, applying the standard conversion factor of 0.9 to nontradables, for which all local currency expenditures apply.

C. Project Benefits

4. The economic benefits for the Project were measured on the basis of incremental electricity generation from the capacity expansion as a result of two new generating units. The economic value was generated from the financial price by multiplying by the standard conversion factor used to convert local costs and benefits to border prices. Power consumption in Malé increased 15% in 2003 over the previous year, which is factored into deriving incremental economic benefits of the Project. Environmental benefits were not included in the EIRR calculation.

D. EIRR

5. The EIRR for the Project was recalculated at 25.5%, which is marginally lower than what was envisaged during appraisal at 27.6%. The recalculated EIRR exceeds the economic opportunity cost of capital of 12%, a minimum requirement for the Project to be economically viable. The Project significantly increased electricity generation and improved distribution to meet demand growth and facilitate sustainable economic growth. Without the Project, STELCO's generating capacity would have been insufficient, leading to frequent overloading and increased system losses, higher operating costs, and poor quality of electricity supply.

Table A12.1: Economic Internal Rate of Return
Costs and Revenues in $1,000 in 2002 Constant Price

Year	Capital Cost	O&M Cost	Fuel Cost	Admin Cost	Total Costs	Incremental Generation (MWh)	Incremental Sales (MWh)	Incremental Sales Revenue	Total Benefit	Net Benefit
1998	216	0	0	0	216	0	0	0	0	-216
1999	247	0	0	0	247	0	0	0	0	-247
2000	2,177	0	0	0	2,177	0	0	0	0	-2,177
2001	11,874	0	0	0	11,874	0	0	0	0	-11,874
2002	5,561	294	1,098	373	7,325	14,260	13,404	2,949	2,949	-4,376
2003	2,027	1,055	5,080	1,726	9,888	91,000	85,540	18,819	18,819	8,931
2004	1,881	1,055	5,080	1,726	9,742	66,000	62,040	13,649	13,649	3,907
2005	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2006	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2007	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2008	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2009	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2010	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2011	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2012	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2013	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2014	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2015	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2016	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2017	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2018	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2019	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2020	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2021	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
2022	0	1,055	5,080	1,726	7,861	66,000	62,040	13,649	13,649	5,787
Total	**23,982**	**21,403**	**102,690**	**34,897**	**182,972**	**1,359,260**	**1,277,704**	**281,095**	**281,095**	**98,123**
NPV @ 12%	14,518	7,301	34,857	11,845	48,838	472,826	444,456	97,780	69,598	13,303
									EIRR	**25.5%**

Admin - Administrative, EIRR - economic internal rate of return, MWh - megawatt-hour, NPV - net present value, O&M - Operations and Maintenance.
Source: Asian Development Bank staff estimates.

QUANTITATIVE ASSESSMENT OF OVERALL PROJECT PERFORMANCE

Table A13.1: Overall Rating

Criteria	Assessment	Rating (0–3)	Weights (%)	Weighted Rating
Relevance	Highly Relevant	3	20	0.60
Efficacy	Highly Efficacious	3	25	0.75
Efficiency	Efficient	2	20	0.40
Sustainability	Likely	2	25	0.50
Institutional Development	Substantial	2	10	0.20
Overall Rating				**2.45** (Successful)

Notes:
Relevance = Project objectives and outputs were relevant to strategic objectives of the Government and the Asian Development Bank.
Efficacy = Project achieved its targets and objectives.
Efficiency = Project achieved objectives efficiently.
Sustainability = Project benefits and development impacts are sustainable.
Institutional Development = Project had beneficial impacts on Government policy and institutional capacity, and other positive social impacts.
Source: Asian Development Bank staff estimates.

Table A13.2: Rating System

Value Rating	Relevance	Efficacy	Efficiency	Sustainability	Institutional Development
3	Highly Relevant	Highly Efficacious	Highly Efficient	Most Likely	Substantial
2	Relevant	Efficacious	Efficient	Likely	Moderate
1	Partly Relevant	Less Efficacious	Less Efficient	Less Likely	Little
0	Irrelevant	Inefficacious	Inefficient	Unlikely	Negligible

Notes:
> 2.5 - Highly Successful
1.6–2.5 - Successful
0.6–1.6 - Partly Successful
< 0.6 - Unsuccessful
Source: Asian Development Bank staff estimates.