Document of
The World Bank

Report No: ICR00001108

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-32050, TF-22458)

ON A

CREDIT
IN THE AMOUNT OF SDR 12.5 MILLION
(US$ 17.5 MILLION EQUIVALENT)

AND A

GLOBAL ENVIRONMENTAL FACILITY GRANT
IN THE AMOUNT OF US$ 4.7 MILLION

TO THE

GOVERNMENT OF THE REPUBLIC OF CAPE VERDE

FOR AN

ENERGY AND WATER SECTOR REFORM AND DEVELOPMENT PROJECT

June 30, 2009

Energy Unit
Country Department AFTEG
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective as of June 29, 2009)

Currency Unit = Cape Verde Escudo (CVE)
Euro 1.00 = US$ 1.40495
US$ 1.00 = Euro 0.711769

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADP	*Água de Portugal* (Water Utility of Portugal)
ARE	*Agência de Regulação Económica* (Agency for Economic Regulation)
CAS	Country Assistance Strategy
CNAG	*Conselho Nacional de Águas* (National Council of Water)
CO2	Carbon Dioxide
CVE	Cape Verde Escudo
DGIE	*Direcção Geral da Indústria e Energia* (Directorate of Industry and Energy)
EDP	*Electricidad de Portugal* (Power Utility of Portugal)
ELECTRA	*Empresa Publica de Electricidade e Água* (Public Company for Electricity and Water)
ESAP	Environmental and Social Action Plan
EU	European Union
GEF	Global Environment Facility
GoCV	Government of Cape Verde
HFO	Heavy Fuel Oil
ICB	International Competitive Bidding
IDA	International Development Association
Infraco	Infrastructure Development projects in Africa and South East Asia
INGRH	*Instituto Nacional de Gestão dos Recursos Hídricos* (National Institute for Water Resources Management)
IRR	Internal Rate of Return
MAAA	*Ministério da Agricultura, Alimentação e Ambiente* (Ministry of Agriculture, Food and Environment)
M&E	Monitoring and Evaluation
MECC	*Ministério de Economia, Crescimento e Competitividade* (Ministry of the Economy, Growth and Competitiveness)
MIH	*Ministério das Infra-estruturas e Habitação* (Ministry of Infrastructure and Housing)
MCIE	*Ministério do Comêrcio, Indústria e Energia* (Ministry of Trade, Industry and Energy)
MTR	Mid-Term Review
NDP	National Development Plan

NPV	Net Present Value
OPEC	Oil Producing and Exporting Countries
PDO	Project Development Objectives
PEAS	*Projecto Energia, Água e Saneamento* (Energy and Water Reform and Development Project)
PHRD	Policy and Human Resources Development Fund
PMU	Project Management Unit
PSR	Project Status Report
PV	Photovoltaic
KPI	Key Performance Indicator
SEPA	*Secretariado Executivo Para o Ambiente* (Executive Secretary for Environment)
SP	Strategic Partner
SSA	Sub-Saharan Africa
TA	Technical Assistance
VPM	Vice Prime Minister (Office of the Vice-President)

Vice President:	Obiageli K. Ezekweseli
Country Director:	Habib M. Fetini
Sector Manager:	Subramanian V. Iyer
Project Team Leader:	Stephan Claude Frederic Garnier
ICR Team Leader:	Stephan Claude Frederic Garnier
ICR Primary Author:	Joseph W.B. Bredie

REPUBLIC OF CAPE VERDE
Energy and Water Sector Reform and Development Project

CONTENTS

A. Basic Information

Country:	Cape Verde	Project Name:	CV-Energy & Water SIL (FY99)
Project ID:	P040990,P042054	L/C/TF Number(s):	COFN-04320,IDA-32050,TF-22458
ICR Date:	06/30/2009	ICR Type:	Core ICR
Lending Instrument:	SIL,SIL	Borrower:	GOV.OF CAPE VERDE
Original Total Commitment:	XDR 12.5M,USD 4.7M	Disbursed Amount:	XDR 12.5M,USD 1.9M
Environmental Category: B,B		**Focal Area**: C	
Implementing Agencies: Prorama Energia, Agua E Saneamento			
Cofinanciers and Other External Partners:			

B. Key Dates

CV-Energy & Water SIL (FY99) - P040990

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	10/02/1997	Effectiveness:	10/01/1999	12/15/1999
Appraisal:	05/25/1998	Restructuring(s):		12/18/2006
Approval:	05/11/1999	Mid-term Review:		
		Closing:	06/30/2004	06/29/2007

CV-GEF Energy & Water SIL (FY99) - P042054

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	10/02/1997	Effectiveness:	10/03/1999	12/15/1999
Appraisal:	05/25/1998	Restructuring(s):		
Approval:	05/11/1999	Mid-term Review:		
		Closing:	06/30/2004	12/31/2008

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes	Unsatisfactory
GEO Outcomes	Unsatisfactory
Risk to Development Outcome	Substantial

Risk to GEO Outcome	Substantial
Bank Performance	Unsatisfactory
Borrower Performance	Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry	Moderately Unsatisfactory	Government:	Unsatisfactory
Quality of Supervision:	Unsatisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory
Overall Bank Performance	Unsatisfactory	Overall Borrower Performance	Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
CV-Energy & Water SIL (FY99) - P040990			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating:**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA)	None
DO rating before Closing/Inactive status	Moderately Satisfactory		

CV-GEF Energy & Water SIL (FY99) - P042054			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating:**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA)	None
GEO rating before Closing/Inactive Status	Unsatisfactory		

D. Sector and Theme Codes

CV-Energy & Water SIL (FY99) - P040990		
	Original	**Actual**
Sector Code (as % of total Bank financing)		
Power	44	44
Renewable energy	7	7

Sanitation	10	10
Water supply	39	39
Theme Code (as % of total Bank financing)		
Climate change	20	20
Other financial and private sector development	20	20
Other urban development	20	20
Regulation and competition policy	20	20
State enterprise/bank restructuring and privatization	20	20

CV-GEF Energy & Water SIL (FY99) - P042054		
	Original	**Actual**
Sector Code (as % of total Bank financing)		
Renewable energy	100	100
Theme Code (as % of total Bank financing)		
Climate change	25	25
Other financial and private sector development	25	25
Other urban development	25	25
Pollution management and environmental health	25	25

E. Bank Staff

CV-Energy & Water SIL (FY99) - P040990

Positions	At ICR	At Approval
Vice President:	Obiageli Katryn Ezekwesili	Callisto E. Madavo
Country Director:	Habib M. Fetini	Mahmood A. Ayub
Sector Manager:	Subramaniam V. Iyer	Mark D. Tomlinson
Project Team Leader:	Stephan Claude Frederic Garnier	Philippe J-P. Durand
ICR Team Leader:	Stephan Claude Frederic Garnier	
ICR Primary Author:	Joseph W. B. Bredie	

CV-GEF Energy & Water SIL (FY99) - P042054		
Positions	**At ICR**	**At Approval**
Vice President:	Obiageli Katryn Ezekwesili	Callisto E. Madavo
Country Director:	Habib M. Fetini	Mahmood A. Ayub
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ICR Team Leader:	Stephan Claude Frederic Garnier	
ICR Primary Author:	Joseph W. B. Bredie	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)
Project was embedded in the objectives of the National Development Plan for 1997-2000, and was to support the Government strategy to increase private sector participation in the infrastructure sectors. Development objectives are (i) to improve the supply of power, water and sanitation systems; (ii) to increase operational and end-use efficiency in the power and water sectors: (iii) to lessen the barriers to the development of renewable energy resources; and (iv) foster sound management of water resources. Specific objectives are:(a) privatization of Electra; (b) increased private participation in and financial autonomy of water operations; (c) expansion and rehabilitation of power, water and sanitation systems in major urban centers; (d) development of wind power capacity with private financing; (e) promotion of solar photovoltaic and wind energy systems for decentralized use; (f) development of a regulatory and legal framework in the power and water sectors; (g) capacity strengthening for regulation, and promotion of energy efficiency.

Revised Project Development Objectives (as approved by original approving authority)

Global Environment Objectives (from Project Appraisal Document)
To reduce contribution to greenhouse gas emissions through increased use of wind power and solar photovoltaic electric systems in the energy balance of Cape Verde.

Revised Global Environment Objectives (as approved by original approving authority)

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Improved access to electricity, water and sanitation services, with optimum use of renewable resources, and promotion of priv ate sector participation.			

Value (quantitative or Qualitative)	Households Access to electricity in major urban centers: Praia - 69 % Midelo - 92% Access to water: Praia -25% Mindelo - 50%. Access to sanitation services: Praia - 8% Mindelo -20%	Access to electricity Praia - 90% Mindelo - 98% Access to water Praia -45% Mindelo -60% Access to sanitation Praia - 2 0% Mindelo -30%		
Date achieved	12/31/1998	12/31/2006		
Comments (incl. % achievement)				
Indicator 2 :	Increased operational and end-use efficiency in the power and water sectors.			
Value (quantitative or Qualitative)	Electra to achieve cost recovery by end-2002. Electricity losses decline from 25% to 15% by 2002, water losses :23% in Praia , and 20% in Mindelo	Electra to achieve break-even on operations in 2008, if appropriate actions are taken. However 2006 will be anothe year of c ontinuing poor performance.		
Date achieved	12/31/1998	12/31/2006		
Comments (incl. % achievement)				

(b) GEO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Under GEF OP#6, remove the barriers to grid connected wind generation and off-grid PV electric systems.			
Value (quantitative or Qualitative)	Penetration of wind power average 19% of total electricity supply in 2002; and 4,500 houselds connected off-grid solar PV sys tems	Penetration of wind will remain about same, until windfarm extension is carried out in 2007.		
Date achieved	12/31/1998	12/31/2006		

Comments (incl. % achievement)	

(c) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Household access to electricity at 80%, to water at 50%, and to sanitation at 35% in Praia by year 2002.			
Value (quantitative or Qualitative)	See comparison with above. The original values at appraisal were over-estimated due to lack of accurate data.	The Target Values at project completion revised accordingly.		
Date achieved	06/10/2005	06/10/2005		
Comments (incl. % achievement)				
Indicator 2 :	Penetration of wind power in the main electricity grids average about 19% by year 2002.			
Value (quantitative or Qualitative)	Appraisal estimate was based on expectations from development of the windfarm, and the private approach to development of so lar PV system	Target value will now reflect possible accomplishment by project end, and expected to be 8% penetration of wind power, and ab out 1,000 individual household solar PV systems.		
Date achieved	06/10/2005	06/10/2005		
Comments (incl. % achievement)				

G. Ratings of Project Performance in ISRs

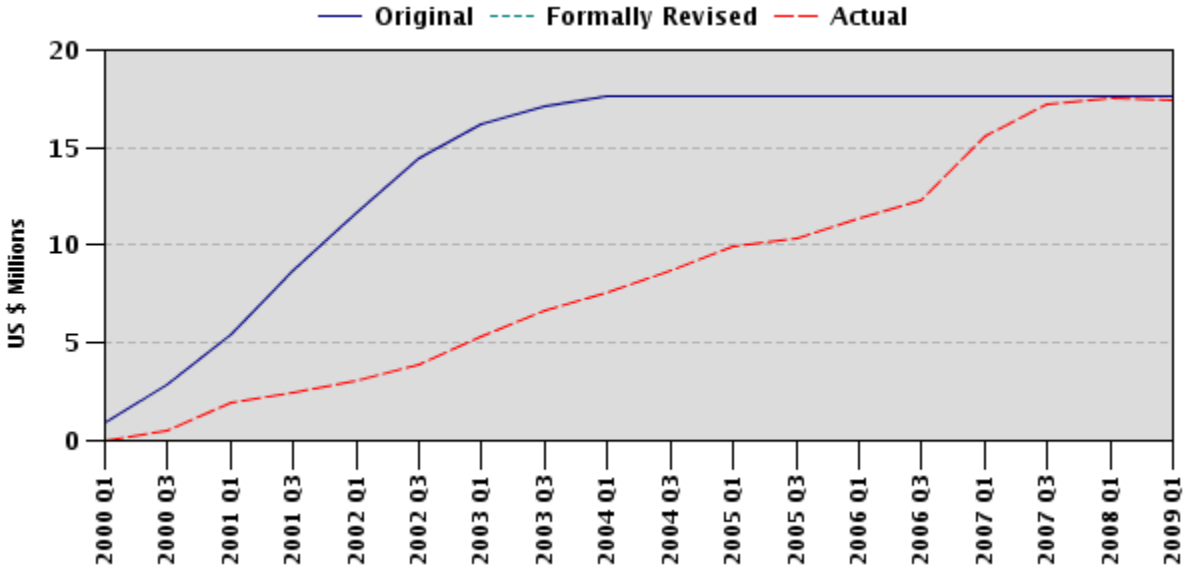
-						
No.	Date ISR Archived	DO	GEO	IP	Actual Disbursements (USD millions)	
					Project 1	Project 2
1	12/25/1999	S	S	S	0.00	0.00
2	04/27/2000	S	S	S	1.52	0.20
3	10/16/2000	HS	HS	S	2.04	0.20
4	12/07/2000	HS	HS	S	2.04	0.20
5	05/30/2001	HS	HS	S	2.92	0.32
6	12/27/2001	HS	HS	S	3.50	0.44
7	03/11/2002	S	S	S	3.70	0.44
8	12/13/2002	S	S	S	6.08	0.66
9	04/18/2003	S	S	S	6.64	0.67
10	12/02/2003	U	S	U	8.36	0.67
11	06/01/2004	U	S	U	9.04	0.67
12	06/15/2005	U	U	U	11.05	0.85
13	11/08/2005	U	U	U	12.03	0.85
14	06/30/2006	U	U	MS	13.99	0.94
15	12/28/2006	MU	MU	MU	16.90	1.04
16	06/25/2007	MS	MS	MS	17.46	1.05
17	12/17/2007	MS	MS	MS	17.55	1.06
18	06/03/2008	MS	MS	MS	17.55	1.22
19	06/25/2008	MU	MU	MS	17.55	1.22
20	12/24/2008	U	U	U	17.49	1.44

H. Restructuring (if any)

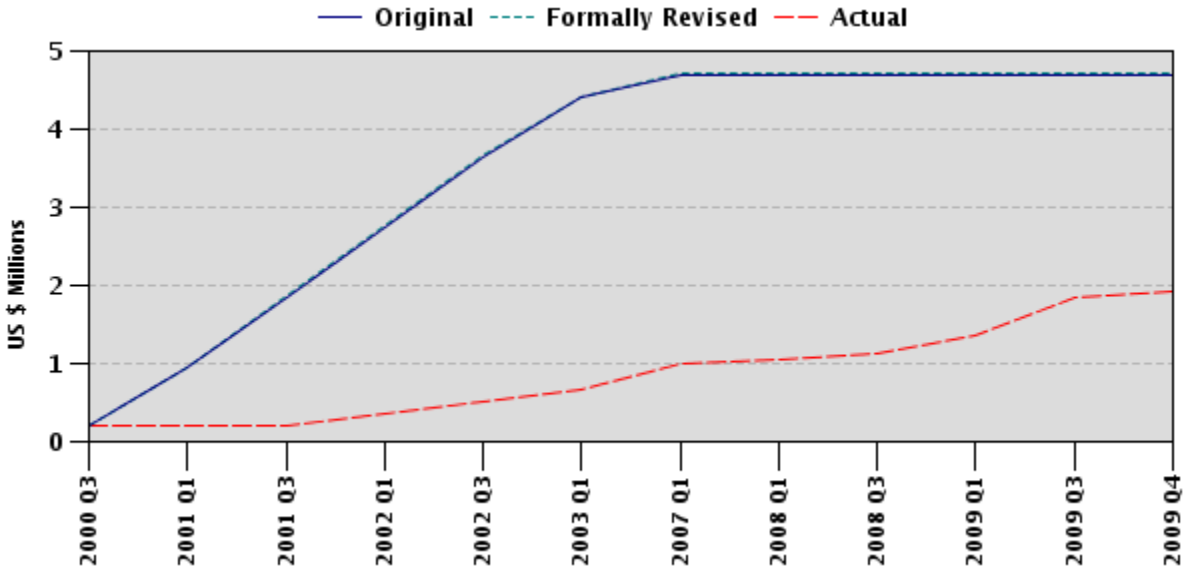
Restructuring Date(s)	Board Approved		ISR Ratings at Restructuring			Amount Disbursed at Restructuring in USD millions		Reason for Restructuring & Key Changes Made
	PDO Change	GEO Change	DO	GEO	IP	Project1	Project 2	
12/18/2006			MU		MU	16.90		

I. Disbursement Profile

P040990



P042054


Original
Formally Revised
Actual
US $ Millions
5
4
3
2
1
0
2000 Q3
2001 Q1
2001 Q3
2002 Q1
2002 Q3
2003 Q1
2007 Q1
2008 Q1
2008 Q3
2009 Q1
2009 Q3
2009 Q4

1. Project Context, Development and Global Environment Objectives Design

1.1 Context at Appraisal

1. **Resource Scarcity.** The Republic of Cape Verde (CV), an island state off the coast of Senegal, has historically struggled with scarce energy and water resources. For energy it was entirely dependent on imported sources of fossil fuel for power generation. Local wind and solar energy were underdeveloped. Energy was also required for desalination to produce water. Even groundwater was scarce with average rainfall of 227mm/year and only 20% of that ending up in groundwater systems. In addition, the basic infrastructure for electricity, water and sewerage was old, beginning to deteriorate and covering only central parts of the major cities. The deteriorating water and sewerage systems posed a public health threat.

2. **Sector Institutions.** Until the end of the 90's, there was no public service law and the institutional framework for the power and water sector was weak. Tariffs for electricity and water had been fixed since 1985 and there was no cost indexing mechanism. ELECTRA, the national power and water utility generated and distributed power and desalinated water on four islands. It operated at a deficit, lacked financial and technical resources to maintain old generating assets and public distribution systems, and capital for expansion. The Government of Cape Verde (GoCV) financed the operating deficit and, in addition, subsidized customers by keeping tariffs low. Municipal utilities were the only source for power and groundwater on the other five inhabited islands. S. Vicente had the only water treatment plant. In 1999 at appraisal, only 43% of household were connected to the electric grid, 20% to water supply (with only a few hours/day or days/week service), 50% connected to the waste water system in Mindelo and only 7% in Praia, the capital. Electricity and water losses were around 14% and 23% respectively due primarily to lack of maintenance and system's age.

3. **Sector Policy.** The government's 1999 policy for the energy and water sectors, part of the 1997-2000 National Development Plan (NDP), called for: extending service coverage; improving service quality; reducing prices for electricity and water for consumers; providing incentives for conservation; encouraging renewable energy sources; and installing water treatment plants. To achieve that it intended to: (i) establish the legal and regulatory framework and regulatory authorities; define tariffs; (ii) privatize ELECTRA; (iii) create municipal enterprises for water treatment; find private providers for off-grid energy particularly photovoltaic (PV); and (iv) develop grid-connected wind power.

4. **The Project.** The Energy and Water Sector Reform and Development Project (Programa Energia, Agua e Saneamento - PEAS) built on the 1987 IDA Infrastructure and Technical Assistance Project (Cr.1954-CV) which had assisted ELECTRA in reducing distribution losses. PEAS was designed to support the agreements reached at the 1997 donor roundtable, organized by the GoCV, to reform the power and water sectors and privatize ELECTRA. PEAS supported the government's 1999 sector policy

and the strategy for private sector participation. It was consistent with the 1997 Country Assistance Strategy (CAS) which focused on achieving a viable and stable macroeconomic framework, consolidating policy reform for privatization, and accelerating poverty reduction. PEAS supported the climate change operational program of the Global Environment Facility (GEF) aimed at promoting renewable energy by reducing cost.

5. **Project Rationale.** At the time of project preparation, in the late 90's, the prevailing enthusiasm for private participation in infrastructure in developing countries was clear. The project design reflected worldwide and regional experience which suggested that institutional development by way of privatization ensures efficiency gains in a short period of time, and that sustainable development required improved institutional framework, optimum use of available resources and improved productivity of human capital by targeting poverty issues. There was strong ownership of this on the part of the Government.

1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)

6. PEAS was embedded in the objectives of the NDP, and was to support the Government strategy to increase private sector participation in the infrastructure sectors. The development objectives were to: (i) improve the supply of power, water and sanitation systems; (ii) increase operational and end-use efficiency in the power and water sectors: (iii) lessen the barriers to the development of renewable energy resources; and (iv) foster sound management of water resources. Specific objectives were: (a) privatization of ELECTRA; (b) increased private participation in and financial autonomy of water operations; (c) expansion and rehabilitation of power, water and sanitation systems in major urban centers; (d) development of wind power capacity with private financing; (e) promotion of solar photovoltaic and wind energy systems for decentralized use; (f) development of a regulatory and legal framework in the power and water sectors; and (g) capacity strengthening for regulation, and promotion of energy efficiency.

7. The **Key Performance Indicators** were:

(i) Household access to electricity in Praia and Mindelo increasing to 90% and 99% respectively by 2007;

(ii) Household access to water in Praia and Mindelo increasing to 65% and 90% respectively by 2007;

(iii) Household access to sanitation in Praia increasing to 43% by 2007;

(iv) The penetration of wind power on the three main grids (Praia, Mindelo & Sal) to an average of 19% by 2002;

(v) 4,500 households to gain access to electricity from off-grid renewable sources;

(vi) Cost recovery achieved for water distribution in 2002 (without subsidy);

(vii) Water losses declining.

1.3 Original Global Environment Objectives (GEO) and Key Indicators (as approved)

8. The GEO was to reduce carbon emissions from power generation through increased use of wind power and solar photovoltaic electric systems in the energy balance of Cape Verde.

9. The **Key Performance Indicators** were:

(i) Full privatization of the power sector;

(ii) Private participation in largest municipal water companies;

(iii) Government subsidy for ELECTRA is phased out by 2000;

(iv) At least 15% of all electricity generated by renewable energy by the year 2003;

(v) Savings of 6500 tons of petroleum products in 2004 (substituted with renewable energy), equivalent to 19,000 tons of C02.

1.4 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

The PDO were not revised.

1.5 Revised GEO (as approved by original approving authority) and Key Indicators, and reasons/justification

The GEO were not revised.

1.6 Main Beneficiaries

10. Expected benefits of the project included: (i) improved quality of life and health for targeted population through increased access to electricity, safe water and sanitation systems; (ii) enhanced private sector development through supply of least-cost, reliable energy and water by private companies; (iii) increased private sector investment in the power and water sectors which would alleviate pressure on public resources; (iv) modernization of the power and water sectors; (v) foreign exchange savings by reducing the imports of fuel for power generation; (vi) development of efficient entities for the monitoring and regulation of power and water sectors; and (vii) reduction of greenhouse gas emissions and both its social and environmental benefits.

11. The project targeted the population and enterprises of major and secondary urban centers, including those that suffered from unsatisfactory power and water services and those in periphery urban areas that did not have access to these services and used inferior, less safe and more expensive means of supply. The project also targeted part of those isolated households that were likely to be excluded from modern supply of electricity in the medium term (about 12,000 households). Cape Verde's enterprises would benefit from the project by participating in new companies in the power and water sectors to supply, install and maintain renewable energy systems.

1.7 Original Components (as approved)

12. The original components of the project are:

12.1. Reform and Development of the Power Sector. (i) Support for the privatization of ELECTRA; (ii) implementation of a sound regulatory and legal framework; (iii) promotion of demand-side management and energy efficient equipment; (iv) strengthening MCIE's capacity for policy, coordination and monitoring; (v) supply electricity to about 4,000 new customers; (vi) implement a sector investment program (marginally economic grid extension and mitigation of environment liabilities); and (v) related studies, technical assistance and training.

12.2. Renewable Energy Promotion and Development. (i) Extension of 7.8 MW of grid-connected wind farms in Praia, Mindelo and Sal; (ii) development of decentralized wind or solar photovoltaic public and individual systems; and (iii) related studies, technical assistance and training.

12.3. Reform and Development of the Water Sector. (i) Support for the implementation of a sound regulatory and legal framework; (ii) creation of autonomous municipal water companies in Assomada and other municipalities; (iii) extension and rehabilitation of the primary and secondary water distribution network and water production systems in Praia, Mindelo, Assomada and Tarrafal; and (iv) related studies, technical assistance and training.

12.4. Sanitation Development. (i) Extension of sanitation systems in Praia; (ii) improvement of sanitation systems in Assomada; (iii) construction of wastewater reuse systems for Praia; and (iv) related studies, technical assistance and training.

12.5. Project Coordination and Monitoring. Support to the Project Management Unit (staff, equipment) and for the implementation of the Environmental management program (studies, TA & training).

1.8 Revised Components

The components were not revised.

1.9 Other significant changes

13. **Extensions of the Closing Date.** The combined IDA-GEF project was last extended on December 2006 to ensure progress on the legal and regulatory framework; then the IDA Credit closed on June 29, 2007. The GEF Grant was first extended for twelve months to December 31, 2007, to allow the Government to enable the procurement of the grid-connected wind farms and the off-grid individual PV systems which encountered delays due to procurement problems and lack of investor interest. By the fourth and final extension, the original closing date of June 30, 2004 had been extended to December 31, 2008 to implement the redesigned critical Wind Farm Project.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

14. Preparation commenced in 1996 with a project unit preparing technical, social and environmental sector studies financed by a Japan Policy and Human Resources Development Fund (PHRD) grant. Preparation accelerated with the 1997 water and power sector reform donor roundtable. Civil society representatives and eight donors participated in the roundtable and reached consensus on privatizing ELECTRA and coordinating donor programs in the water and sanitation sector of the major urban centers under the umbrella of PEAS. It was decided to establish a task force and regulatory committee to prepare the legal and regulatory framework for the privatization of ELECTRA and for tariff reform. This was to be completed by 1998. In early 1999 at appraisal, a Privatization Advisor had been recruited and the Statement of Sector Development Policy had been issued. The legal framework for privatization was signed in late 1999.

15. PEAS was approved in May 1999, a year after appraisal, and became effective seven months later in December 1999. Effectiveness conditions included the release by the GoCV of final documents for the privatization of ELECTRA (including a draft concession agreement) satisfactory to IDA. However, elections in 2000 delayed the signing of the concession agreement till 2002 when the new Government had come into power. Soon, the complexity of PEAS – privatization of the national utility for electricity and water, expanding its generation capacity, reducing its losses, improving its efficiency, collection and finance, setting tariffs, environmental remediation, social connections for the poor, procuring renewable energy projects, expanding water supply and sanitation systems and treating plants – became apparent and started to slow implementation. In part, these implementation issues were aggravated by PEAS's fragmentation – project activities spread over nine islands each with their own power and water systems and local agencies and municipalities to manage these. Moreover, it soon became apparent that implementation capacity of ELECTRA, the newly established regulatory agency, the environmental agency, and the ministries in charge of energy and water was weak.

16. PEAS' design did not include mitigating measures to deal with the delays, complexity or fragmentation. The risk that Government commitment for the privatization would falter was considered negligible to modest. In addition, risks related to an unsatisfactory concession agreement were considered negligible and to be mitigated with the recruitment of advisors (which was done in 2005 with limited benefits). Also, technical or economic limitations to the wind farm extension were considered negligible while household's ability/willingness to pay for power, water and sanitation services that do not meet their expectations was considered modest as was the performance of implementing entities and delays with procurement decisions. However, overall risk rating was substantial. Taken together, PEAS' design and quality-at-entry were moderately unsatisfactory given the complexities, fragmentation, weak implementation and procurement capacity and the unrealistic expectations regarding consumers' willingness to pay for sanitation services (in view of the fact that all or most had septic

tanks) and their demand for PV systems (in view of the expanded connections and rural electrification).

2.2 Implementation

17. The success of the project was largely predicated on its implementation by a financially viable ELECTRA, under the management and majority ownership of a private foreign operator. The implementation period (2000-2008) turned out to be unpropitious for the restoration of power sector finances. The continued rise in oil prices throughout the period seriously affected ELECTRA because its power generation is based almost exclusively on imported oil. In addition, the authorities failed to put in place adequate tariff mechanisms allowing for cost recovery. Starting from a situation where electricity tariffs were below cost recovery, the GoCV found it politically and socially difficult to adjust tariffs to ensure adequate return on investments for the private operator, in addition to the increase required to pass on rising oil prices to consumers. The poor performance of ELECTRA and the issues with tariffs affected implementation severely.

18. **Failure of ELECTRA's privatization.** According to the sector development policy, the GoCV had decided to privatize ELECTRA because not only did it supply power to less than half and water to only one fifth of households, but it did so at costs that generated financial deficits that had to be covered by government contributions. The privatization agreement, which included investments by the Strategic Partners (SP) in power and desalination plants, was signed in late 2000. But the finalization of the concession agreement was held up for a variety of reasons including the delays in the mobilization of the funds by the SP and disagreements between the SP and the GoCV (which was represented on ELECTRA Board of Directors) on the tariff adjustments to accompany the investments. The 2000/2001 elections, resulting in a new Government delayed the signing of the concession agreement further till 2002. Investments expanding power generation and water production capacity eventually took place in 2002/2003. This allowed a significant increase in access to utility services (ELECTRA's customers increased from less than 30,000 in 1998 to around 95,000 in 2008). It also resulted in an improvement in generation efficiency and costs (with new engines running on HFO instead of diesel).

19. However, management and supervision by the Board remained ineffective and ELECTRA's dire financial position hold up improvement in other areas. Quality and reliability of service remained inadequate, and brown-outs and cuts in water supply continued. High levels of distribution losses, resulting from fraud and illegal connections, persisted, particularly in Praia. The SP trained staff, but their participation in ELECTRA's daily management was minimal, especially in the strategic, financial and engineering areas. No further investments were made during 2004-2006 given the persistent disagreements over tariff adjustments. Eventually, in 2006 the GoCV recuperated a majority equity participation in ELECTRA and assumed again the responsibility for appointing the managers of the utility. ELECTRA's operational performance deteriorated further in 2007. In 2008, the SP ceded back to the GoCV their remaining equity share in ELECTRA.

20. In addition to managing the expansion of power generation and desalination capacity, ELECTRA took on, under the concession agreement, several commitments related to project components, such as: operating a new water treatment plant in Praia, connecting a much larger proportion of households to the expanded water supply and sewerage systems, managing the procurement of the wind farm extensions and of the PV system. Achieving these goals proved difficult given ELECTRA financial distress and persistent disagreements between the SP and the authorities regarding tariff adjustments.

21. Privatization did bring positive changes in some areas, such as financial reporting and accounting. However, at project completion, key indicators of commercial and financial performance had not improved. ELECTRA's financial situation remained dire, and in the absence of significant investments after 2003, the growing demand for power, water and sanitation remained unmet.

22. **Regulatory Delays.** To accompany privatization, the legal and regulatory framework for the sector had to be developed from scratch. Legislation for power, water, concessionary arrangements and independent regulations was passed in 1999. However, adequate tariff-setting mechanisms and regulatory arrangements for the sectors had yet to be put in place. During project preparation, these were identified as key elements for the success of privatization, and PEAS included technical assistance to support "the implementation of a sound regulatory framework for the power and water sectors, to be monitored and enforced by a multi-sector regulatory entity". However, their absence at the beginning of the privatization process proved to be a source of uncertainties, conflicts and failure. Subsequently, in the absence of sustained political commitment, putting in place adequate tariff regulation proved difficult.

23. The (first) Multisectoral Regulatory Agency was created in 2000, but appointment and training of staff were slow and regulatory capacity remained inadequate. In view of this situation, the newly elected GoCV dissolved the agency in 2002. The (second) Agency for Economic Regulation *(Agencia de Regulacao Economica – ARE)* created in 2003 also took a long time to develop staff and regulatory capacity. The GoCV enacted legislation to cap tariffs for five years allowing ARE only annual adjustments based on cost factors. However, these adjustments were difficult to make given ARE's capacity and the lack of planification of ELECTRA's investments (aggravated by the physical distance between ELECTRA's headquarter located in Mindelo on the Island of S. Vicente and the regulator located in the capital Praia on Santiago). At project closing, after significant technical assistance, supported by the Bank, ARE functioned satisfactorily, but consumers find tariffs for electricity and water, and particularly sewerage, high in view of the inadequate supply and the frequent cuts.

24. **Procurement Problems.** The first tender for the wind farms was launched in 2002. IDA had agreed (Project Appraisal Document-PAD p. 9; Aide Memoire of 11/27/2000) that ELECTRA could use its own procurement procedures. However, it did not approve the prequalification proposing instead a new ICB tender with post qualification. The ICB was launched in 2003 and one of the two bids was considered responsive. However, ELECTRA could not come up with the funds to pay the gap

between the GEF grant and bid price. During 2006 and 2007, the GoCV looked for new donors to co-finance the wind farms. In 2007, Infraco - an EU-NGO for public-private partnership – agreed to develop a much larger (28MW instead of 5MW) wind farm extension project. Infraco issued EU standard bidding documents, but although the Bank agreed that these were unrestrictive, transparent and competitive, it could not accept a tender that did not use Bank procedures and procurement documents (the bidding document used by the project sponsors would have required numerous waivers to ensure compliance with the Bank guidelines including the World Bank Fraud and Corruption / Audit, the Bank Remedies and the refunding clauses in the case of misprocurement in the EPC contract). Consequently, the Bank did not approve the use of the GEF grant for this tender despite an official request for waivers from the GoCV. Sixty percent of the GEF grant for renewable energy was cancelled.

25. It should be noted that none of the supervision missions included procurement specialists and the PMU said that between 2003 and 2007 it had to wait, often for months, to obtain no-objections or advice for procurement activities.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

26. The PAD does not have an M&E section. Annex 1 lists 27 Key Performance Indicators (KPIs), five for sector-related CAS Goal, seven for the PDOs and GEF operational program objective, and fifteen for project outputs. The monitoring would be done from supervision, economic and sector reports. The indicators have individual achievement dates, with the majority for the power; water and sanitation; and, renewable energy components to be reached by 2007. The KPIs have been monitored and updated only in 2002, 2006 and at closing. It is clear that the project did not invest enough in a specific M&E system neither for the PMU nor for ELECTRA. Neither the Bank, the PMU nor ELECTRA paid sufficient attention to the KPIs; the M&E system in place failed in generating data in a timely manner, as a result, during most of the project's lifetime, ARE barely knew what to look for and then got little from ELECTRA to work on. Therefore, there is a clear disconnect with the M&E satisfactory rating in the PSRs.

27. At Mid Term Review (MTR), the KPIs were reviewed for achievement and realism. Proposals for resetting starting points and unrealistic targets and problematic definitions were put forward when the starting point of the indicator clearly relied on faulty data or the targets were unrealistic (as noted in the Aide memoire of the January 2003 mission). However, target values were never formally revised. The majority of the GEO and PDO indicators had either not been achieved or not reported on and therefore clearly not used. Exceptions were ELECTRA's privatization, investments, and training of workers which had been achieved. Also achieved were: the per capita water consumption in Praia and Assomada for 2002; the legal framework for the water/sanitation sector; and, the installation of autonomous water services. The PMU has updated the indicators at closing which are shown in the data sheet, part F. Results Framework Analysis and in Annex 2. Globally, only one third of the 27 indicators have been achieved.

2.4 Safeguard and Fiduciary Compliance

28. **Safeguards.** The Executive Secretary for Environment *(Secretariado Executivo Para o Ambiente-SEPA)* was to oversee compliance with the Environmental and Social Action Plan (ESAP). The ESAP comprised the cleaning up of ELECTRA's production sites (noise, gas emissions and oil spills) and applying social and environmental standards during the construction of the power, water and sanitation systems infrastructures. Although SEPA's Directorate was provided with the required equipments to fulfill their work, it was not effective at monitoring and ensuring compliance and was replaced in 2005 by the General Direction of the Environment of the Ministry of Environment Agriculture and Fishing. Compliance was ensured through regular Bank supervision missions (although these did not include safeguard specialists), the inclusion of mitigation measures in construction contracts, and the oversight of the implementation of the mitigation activities by ELECTRA. These were completed in 2005. There was no resettlement, either for the construction, or the acquisition of sites for the wind farms, and OP 4.12 – Involuntary Resettlement did not apply.

29. **Fiduciary.** Financial management including audits has been satisfactory throughout implementation. Supervision missions included financial management specialists at the MTR and in 2006. The procurement of some activities on the other hand was plagued by confusion and misunderstandings. The Bank did not allow other than its own procurement procedures for the purchase of wind power equipments. With the benefit of hindsight, this impossibility should have been clarified from the beginning, instead of leaving open the possibility of the use of ELECTRA's own procedures. Also, the PIU has indicated that access to and supervision by procurement specialists was not sufficient (paragraph 23). While procurement related issues were not the primary cause of the very partial implementation of the renewable energy component, they created additional delays without which an earlier restructuring of this component might have been possible.

2.5 Post-completion Operation/Next Phase

30. Connections to the water supply and sewerage continue to be made although at a very slow pace, for instance, about 200/year for sewerage connections in Tarrafal. At this rate it will take years before the water treatment plants can function properly. In view of the continuing strong demand for more power and water, ELECTRA's investment plans include power and water production, water reserve build-up, and distribution expansion. However, unresolved revenue/tariff-, collection and billing-, and operational issues hamper efforts to meet demand. These issues and lack of capital/equity make it difficult for ELECTRA to access capital markets and investors to finance expansion of supply. The Bank is working with ELECTRA to address strategic and financing issues and investments in power on the islands of Sal and Sao Vicente and in water in Praia.

31. Further sector reforms in terms of restructuring ELECTRA and tariff reform are needed to achieve PEAS objectives of efficiency, sound management and renewable energy. The GoCV plans to restructure ELECTRA and the Bank is proposing support for

policy, strategy, efficiency and cost reforms. The Bank and other donors are also looking into further support for ARE to strengthen its regulatory capacity. Tariffs do not yet function as incentives for ELECTRA to improve efficiency and meet demand, while high connection fees discourage consumers from connecting to sewers. On the other hand, given observed oil price volatility, ELECTRA should be able to pass on fully and without delays the variations of oil prices to its customers. The use of the current tariff methodology based on performance benchmarks developed for distribution utilities in developed countries is not appropriate (at least in the short run). This is important as the Government has been clear that it wishes to avoid subsidizing inefficiency at ELECTRA through higher tariffs. Therefore, a robust and incentive-compatible tariff adjustment mechanism that is better tailored to Cape Verde's logistical realities is still essential for the viability of the power and water sectors. Since ARE has not been able to function without political interference in tariff setting, it is recommended to review ARE's governance arrangements, including a better delineation of its role in relation to that of other agencies exercising regulatory functions, and to strengthen its analytical capacity to base tariffs on sound economic and social analysis. Additional capacity building within ARE will be required.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

32. The PDO of improving supply of power, water and sanitation, increase efficiency, and develop renewable energy were (and remain) important priorities for Cape Verde and for Bank assistance. PEAS's design to establish the legal and regulatory environment, privatize utilities, increase supply, and expand renewable energy was relevant.

33. The project was designed around the introduction of private participation. The success of the project was largely predicated on its implementation by a financially viable ELECTRA, under the management and majority ownership of a private foreign operator. The Renewable Energy Component, with the objective to increase Grid Connected Wind farms (7.8MW) and off-grid electrification services using photovoltaic and wind systems have proved to be unsuccessful due to lack of financing to fill the gap and weak appraisal of market conditions for the PV system, which was largely superseded by on-grid electrification.

34. Implementation did result in increased connections to power, water and sanitation albeit less than planned for water and sanitation and insufficient to satisfy demand. No new renewable energy resources have been built despite grant funding availability and extensive technical assistance.

3.2 Achievement of Project Development Objectives and Global Environment Objectives

35. The PDO indicators for improved access to energy, water and sanitation were not achieved, although access improved significantly for energy (90% of households connected), less rapidly for water (60% connected and consumption still low) and very gradually for sanitation (30% connected) (see Annex 2). This level of achievement

resulted from the investments in power and desalination by ELECTRA and in basic infrastructure under PEAS. The achievement will improve after the closing date of PEAS with the additional connections that are planned for the next 4 or 5 years. This is possible since the water supply and sanitation - including waste water treatment - systems have been greatly expanded and rehabilitated in the major urban and suburban areas. An increase in the supply of water and a decrease in the high costs of connection – particularly for sewerage – are needed to optimize the PEAS investments in basic water, sewerage and water treatment infrastructure.

36. Private sector participation in the sector was achieved for most of the life of PEAS with the buy-in of ELECTRA by private partners. Lack and/or failure of (tariff) regulations and ineffective management and supervision by the Board caused ELECTRA to revert back to the State, partially at the end of 2006, and completely in 2008, without much if any benefit from the privatization in terms of commercial performance or quality of service. Efficiency improvements in energy and water use have not been adequately monitored and do not appear to have been achieved with the notable exception of the generalization of efficient lighting financed under the GEF grant, which is the most cost-effective way to reduce energy consumption and reduce green-house emissions. Distribution losses in both sectors remain high. Clandestine connections, especially in Praia, are now a major issue causing unacceptable levels of distribution losses. It has to be noted that since ELECTRA's management reverted back to the State, the situation and sector sustainability has worsened.

37. The GEF objective of removing barriers to renewable energy has been extensively studied both before and during implementation. It has not been achieved, however, as a result of a mix of design, management and supervision failures. No new sources of renewable energy – grid-connected wind farm extensions and off-grid PV systems - have been built due to inability to finance by ELECTRA and failed procurement of the wind farms and conceptual and analytical misunderstandings of the viability of the PV systems. Greenhouse gas emissions have not been monitored, but are very likely to have declined as a result of increased efficiency in desalination and cleaner power generation plants.

3.3 Efficiency

38. PEAS was to bring about efficiency improvements in water and sanitation and power, lower the cost of services to consumers, increase revenues for the Government, and improve the environment. At appraisal, the investment in increasing water supply was projected to yield a Net Present Value (NPV) of 797 million CVE. At closing, the NPV was calculated at 993 million CVE. For sanitation, the average incremental cost per cubic meter of effluent was estimated at 30.23 CVE at appraisal. At completion, this incremental cost was not possible to calculate due to lack of data. The improvements in efficiency, quantity and quality of electricity were not quantified at appraisal and are likely to have been achieved at least in part (see Annex 2). Benefits in terms of reduced losses and increased revenues to the Government as a result of privatization have not been achieved. The Government had to exchange financing subsidies for power and water for financial guarantees of ELECTRA's commercial loans. The renewable energy component was not realized and the economic benefits from that have not been achieved.

39. Financial benefits in terms of increased revenues and efficiency for ELECTRA have not been achieved largely because of inadequate tariff adjustments and the reversal of ELECTRA's privatization. International investors have not been found for the off-grid PV systems. Institutional benefits have been uneven although consumers in secondary towns have benefitted from the establishment of autonomous utility companies in terms of better quality services. On the other hand, the costs of services have increased for both power and water while the service quality of the latter has not. PEAS has brought about improvements in the environment. ELECTRA's power plants have been cleaned-up; emissions from desalination and generation have been lowered thanks to better technologies that use less energy and fuel.

3.4 Justification of Overall Outcome and Global Environment Outcome Rating
Rating: Unsatisfactory

40. The partial outcomes of PEAS in terms of: (i) increased power, water and sanitation services; (ii) better sector institutions and a new regulatory framework; and (iii) mixed outcomes with privatization and efficiency, have been lowered by the fact that the renewable component has not been realized. The assessment of outcomes must also take into account the rapid increase in customer demand for sector services. For instance, population growth in Praia has been between 2 and 3% annually for most of the life of PEAS. While supply has increased, the demand for connections has begun to exceed the increase in supply. As a result, the level of service (i.e. liters of water/day available per customer) has been declining. Also, the small base of basic infrastructure at effectiveness and the almost total lack of a legal and regulatory framework, combined with a weak national utility must be taken into account in assessing progress with increasing supply of power, water and sanitation and developing a regulatory framework and tariff agency. But, even taking the small positive outcomes in the global environment into account the overall outcome is unsatisfactory.

41. The GEF objective of removing barriers to renewable energy, it has not been achieved and no new sources of renewable energy have been built. The GEF disbursement rate is, at the end of the project, low with less than 40%. The KPIs for the GEF component have not been achieved. The one redeeming future has been the effective support for energy efficient lighting; however the overall outcome is unsatisfactory.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

42. PEAS's increases in access to power, water and sanitation have contributed to poverty reduction. As a matter of fact, PEAS financed some 3,200 social connections to power for poor families. It is unfortunate that such an initiative did not cover all targeted stakeholders, especially the poor and most vulnerable households in Tarrafal and Praia. Consequently, this missed opportunity resulted in lower social outcomes (in terms of environment enhancement and social development). The rural electrification and major

improvements of the roads network undertaken in parallel by the GoCV have brought electricity to towns and villages throughout the country and improved mobility and access to, among other, schools and markets. Moreover, the GoCV gave away 300,000 low-consumption lamps (financed by the GEF portion of the project) to families helping to lower their electricity bills.

(b) Institutional Change/Strengthening

43. Within the Cape Verdean government, the DGIE still does not have the technical means to efficiently manage the sector and exercise its supervisory role over ELECTRA and PEAS did not provide enough attention on DGIE's capacity building. Institutional change in the regulatory area has been slow and it has been poor in the privatization policy area. The GoCV created the legislative basis for the power, water and sanitation sector in 1999/2000, which did not exist. It was less effective in creating an independent regulatory agency for the sector, which took until 2006. Strengthening the Instituto Nacional de Gestão dos Recursos Hidricos (National Institute for Water Resource Management – responsible for groundwater) was slow as was the strengthening of the environmental agency and ministry.

(c) Other Unintended Outcomes and Impacts (positive or negative)

44. To improve public health PEAS not only included an expansion of the water and sewerage systems in urban areas to replace tanker trucks, old reservoirs, standpipes and septic tanks, but also water treatment plants in Praia, Tarrafal and St Cruz among others. The new treatment plant in Praia operated by ELECTRA has a capacity of 8,000-14,000m3/day and uses gas from sludge to treat the sludge so that it can be used for agricultural purposes. However, in part because the water supply is still inadequate (a few hours/day), but more because connections to the expanded sewerage system are expensive, only about 1,000 households are connected and the plant gets less than 1,500m3 of sewerage/day. This is insufficient to use the sludge processing part of the plant. Also, some of the sophisticated purification sub-systems do not work. The end result is that the sludge is dumped and the (semi-treated) effluent is pumped into the ocean (some 1,000m3/day). Only by 2014 is the plant expected to treat some 9.000m3 of sewerage. In Tarrafal, there are only 200 connections to the sewers and the (small amount of) sewerage is made to bypass the large treatment plant and dumped in the ocean. The plant is St. Cruz is also not used for similar reasons.

45. ARE has not been able to regulate the connection costs (for water/sewerage) charged by ELECTRA or come up with incentives to encourage household to connect to the sewerage system. It is cheaper for household to use their (often self-built and not normally serviced) septic tanks. Neither the intended impact on the environment from the investment in the wastewater treatment plants, nor the projected economic return (selling sludge and effluent) had been realized at closing.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

46. There have not been further stakeholder workshops after the one in 1997 (paragraph 13). However, customers have various channels to discuss (or complain about) power, water or sanitation services. ELECTRA has offices in most urban areas as has ARE where customers can discuss their issues. As a matter of fact, ARE publishes information leaflets about public services and the rights of customers. Finally, services and tariffs are subject of debate in the National Assembly, and representatives of the municipalities have a seat on the Board of ELECTRA.

4. Assessment of Risk to Development Outcome and Global Environment Outcome

Rating: Substantial

47. The GoCV is planning further expansion of power and water supply (www.governo.cv/ Programa do Governo Para A VII Legislatura 2006-2011). The infrastructure built and/or rehabilitated under PEAS will allow the distribution of energy and water to more consumers. The greatest risk will be, however, to find a balance between tariffs that will be affordable for customers and at the same time enable utilities to recover cost and improve earnings. The challenge for ARE will be to come up with a more progressive tariff structure that's responsive to consumers of different income and consumption levels. In addition, a financial risk remains with regards to ELECTRA and to the guarantees provided by the Government. ELECTRA's financial situation remains dire and its level of debt high and still needs to be addressed. The risk to the global environment outcomes is relatively small although the challenge of untreated effluent being dumped into the sea needs to be resolved. New power and desalination plants will have cleaner technologies, planned investments in wind power will help reduce emissions, and once the water treatment plants become fully operational, disposal of sewerage will improve.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry
Rating: Moderately Unsatisfactory

48. PEAS's design responded to the urgent needs of customers for more energy, water and sewerage services. Also, cooperation with other donors and with civil representatives and government agencies was satisfactory during preparation and appraisal. Three donors, the Austrian Government, the OPEC Fund, and the European Union co-financed the Project. However, with the benefit of hindsight, it appears that progress with a regulatory entity and framework was not sufficiently advanced, and the analyses of ELECTRA's financial health and of the prospects of attracting investors for the off-grid PV systems were overly optimistic. In addition, the costing of the wind equipments was underestimated (in fairness, the devaluation of the USD against the euro

and increasing international demand for wind power equipments were parameters that were difficult to forecast at project preparation). The viability of the sewage plant was not sufficiently analyzed. Connections for poor and vulnerable households should have been highly subsidized and seen as contributing to improvements in public health.

(b) Quality of Supervision
Rating: Unsatisfactory

49. The first supervision mission and the PMU agreed that future missions would be conducted semi-annually. However, between the December 1999 effectiveness and the December 2008 closing, there were 12 missions with in some cases intervals exceeding 18 months. Beginning in 2005, supervision missions actively addressed the unresolved tariff setting issue, providing technical assistance to ARE, and including financial analyst in supervisions. The Bank financed the services of a mediator to help resolve the differences between the GoCV and the SP. In view of the difficulties with ELECTRA's privatization and finances, management suggested to add the country economist to supervision missions, and to perform a quality of supervision assessment (QSA). These suggestions were not taken up. Overall, there was an intense, if ultimately unsuccessful, supervision focus on salvaging the privatization experiment.

50. There were four Task Team Leaders (TTLs) over the lifetime of the project (9 years) and although the energy and sanitary specialists provided continuity, there was never a procurement specialist on the supervision missions to work with the PMU and ELECTRA on the complicated procurement of the wind farm extension, nor were Social Development or Environmental Specialists included to address the social and environmental issues. As the Government's ICR indicates, the PMU at times did not know which staff could be contacted to help with procurement, regulatory, social or environmental issues. Moreover, the project languished for long periods with insufficient proactivity of restructuring. The MTR was done at the right time, but did not push for solutions with privatization and tariffs.

51. All this said, it is important to point out that the project has suffered from very negative external circumstances and the financial viability of ELECTRA and of the GoCV have been severely affected by the increase in oil prices. In addition, the successful implementation of the project was predicated on the privatization of ELECTRA and on implementation by the private operators. The Bank was very actively involved in trying to bridge the differences between EDP and the authorities regarding tariff adjustments and save privatization and the failure of the GoCV to put in place adequate tariff setting mechanisms cannot be blamed on a lack of effort on the Bank part. It is not clear if more intense supervision efforts and resources would have made a significant difference. The failure of privatization and the slow progress in the establishment of adequate regulatory institutions and mechanisms must be put in the context of similar problems with power/water sector reforms and privatization in Sub Saharan Africa countries in the same period. The complete dependence of ELECTRA on imported oil products for power generation and water production meant that the stress put by the oil price shock on ELECTRA was even more severe than for other African utilities.

(c) Justification of Rating for Overall Bank Performance
Rating: Unsatisfactory

52. Bank performance in terms of working with the GoCV in establishing: (i) a regulatory environment and authority; (ii) a commercially minded and responsive supervisory Board for ELECTRA; and (iii) a tariff structure that provided incentives for ELECTRA as well as for consumers, was not effective overall. In part because of the lack of continuity in the TTLs and uneven skill composition of the task teams, supervision was less effective than expected by the GoCV. PEAS was designed to make major contribution to both social and environmental conditions with the renewable energy projects, however inconsistencies about procurement procedures, paucity of timely advice, and misunderstandings contributed to cancellation of these project investments.

5.2 Borrower Performance

(a) Government Performance
Rating: Unsatisfactory

53. At the time of project preparation, in the late 90's, the prevailing enthusiasm for private participation in infrastructure in developing countries was clear. However, the delay with the preparation of the regulatory framework and the establishment of the agency was to haunt the privatization of ELECTRA as well as the implementation of PEAS. Throughout the privatization episode, the strength of GoCV commitment to privatization and tariff reform remained in question. The government was committed to protecting the consumers by keeping tariffs low. The resulting tariff did not reflect commercial costs in an environment of rising oil prices. These conflicting policies affected the success of ELECTRA's privatization and ELECTRA's performance has worsened since the return to public ownership with a rapid rise in non-technical losses in Praia. It is not clear if even at this time, the expertise of ELECTRA's Board is adequate to deal with the many strategic difficulties in the planning, financing, billing, and maintenance areas the utility is facing. The sector ministries and ARE have been only partially effective in overseeing regulations, the utilities and tariffs, and environmental protection. The government's performance in implementing PEAS was unsatisfactory and there is a need for structural sector reforms in the ministries to improve oversight of ELECTRA and the municipal utilities and for genuine independence of regulatory agencies if investments in the water and electricity sectors are to generate the expected benefits.

(b) Implementing Agency or Agencies Performance
Rating: Moderately Unsatisfactory

54. The PMU has been diligent in the fiduciary area and in reporting. It has worked well with the other donors, but has been less proactive with ELECTRA, ARE, the sector ministries and the Government. Although a number of issues are not fully under its control, the PMU has to share the failure in coordinating the management and procurement of the renewable energy projects with ELECTRA, the sector ministries and

the Bank. Similarly, the agencies – ARE, INGRH and SEPA - have also shown uneven performance. ELECTRA's performance has been unsatisfactory and part of that was due to poor oversight by the Board, especially of the government and municipal representatives who had golden shares in the company.

(c) Justification of Rating for Overall Borrower Performance
Rating: Unsatisfactory

55. While preparation of PEAS by the PMU, ministries, agencies and the Government showed strong commitment, these partners have been less effective in implementing the Project. PEAS was not given the attention it required from DGIE, commensurate with the level of resources provided to DGIE under PEAS. The dispute with the SP over investment efficiency and tariff policy persisted for a large share of the life of the project, and the underlying issues remained unresolved after Government resumed ownership of ELECTRA in 2006. Parts of PEAS investments such as the extension of the water and sewerage systems and the water treatment plants are not operational and do not generate benefits. In the end, customers are not having their need for power, water and sanitation met despite the investments made. The Government has to take its share of responsibility for this unsatisfactory situation.

6. Lessons Learned

56. **Project preparation and quality at entry**. Some issues could have been better anticipated during project preparation.

- The **underestimation of the difficulties and risks related to privatization** had a significant impact on project implementation. While there was broad agreement on the overall privatization scheme, there was insufficient appreciation and consensus on among other issues, the tariff, and the duration and exclusiveness conditions of the concession agreement. Moreover, even after the agreement had been signed, disagreements persisted about the timing and size of investments, source and cost of finance/loans, tariffs, earnings and efficiency/performance standards. It is now widely accepted that an enabling condition for a successful privatization is to put in place a comprehensive, sound concession agreement (including tariff adjustment provisions) prior to signing a privatization contract.

- The project suffered from an **unrealistic timeframe for the implementation of the legal and regulatory reform**. Initiating the privatization process when the legal and regulatory framework has to be established from scratch is a major challenge. Although in retrospect, the sequencing of the legal and regulatory reform in relation to the privatization process could be called into question, the focus here is the insufficient time allocated to the establishment of the regulatory agency prior to project effectiveness. Experience from other countries has shown that, in principle, a role of the regulator is to play an honest-broker role, independently intermediating between the government and

operator. Its earlier establishment might have mitigated the many difficulties that impacted the privatization process.

- The implementation of the regulatory framework and entity was crucial for the success of this power/water project, but was designed and supported under a different IDA-financed project, which created some difficulties during implementation. The ingredients of successful utility regulation are largely sector specific and it appears important to have a strong and sustained input of sector experts in the design and supervision of activities in support to regulatory reform and capacity-building.

- With hindsight, the support to regulatory reform provided by the Bank under this project appears to have not been focused enough on the critical elements for the success of the project. One possible approach would have been to move forward with regulation by contract, which is a well established model for water utilities, and is used as well as for small power utilities. A contractual tariff adjustment formula could have been agreed at the time of privatization. It would have set the indexing parameters for the first few years of privatization (e.g. five years), and established the broad principles for subsequent revisions. This would have left enough time to establish the sector regulator and build its capacity, which could have avoided the disputes between the GoCV and the SP over tariff adjustments that were the main source of failure of the privatization experiment.

- Finally, in retrospect, a **strong policy and regulatory framework also needed to be in place to exploit opportunities for alternative energy,** in order to deal in a satisfactory manner with demand-side issues. Cape Verde had excellent opportunities for alternative energies but a policy and regulatory framework conducive to renewable energy needed to be in place for wide scale adoption to be successful. Most potential users did not have enough incentives, or could not afford the initial investment in energy systems such as solar. It is imperative for the Government and donors to find a way to have customers take a longer view about their energy needs and costs and act upon incentives to invest in alternative energies to meet their needs. Similarly, the demand-side issues had not been sufficiently analyzed for the sanitation component.

57. **Putting in place robust and realistic tariff adjustment mechanisms is still essential for the viability of the power and water sectors.** Given observed oil price volatility, ELECTRA should be able to pass on fully and without delays the variations of oil prices to its customers. There is ample evidence that financially distressed utilities react by cutting maintenance and reducing investments, and that their operational performance tends to deteriorate as a result. The tariffs set by ARE, need to recognize that ELECTRA's costs of operation are inherently high: providing electricity and water services to nine inhabited islands (only three of which have any substantial demand) presents ELECTRA with serious logistical challenges. In addition, ELECTRA will need to meet the increase in demand and catch up with the lack of investments since 2003. In

this context, the use of tariff methodologies and performance benchmarks developed for distribution utilities in developed countries is not appropriate.

58. **Addressing the Social Dimension of utility services and affordability issues.** The issue of affordability, for the poorest consumers, has been a significant one at several points in the implementation of this project (PV component, sanitation, tariff adjustment). Given the positive externalities of sanitation, and the existence of underutilized infrastructure, it is urgent to put in place adequate pricing incentives for increasing the number of connections. Subsidizing the upfront connection fee would appear to be a logical option.

59. A more general concern, which the Authorities will always need to take into consideration, is the inherent tension between seeking a cost-reflective tariff structure on the one hand, and taking into account social and political considerations on the other. The two most salient issues are (i) the existence of social features in the tariff, and (ii) having a uniform national tariff. Regarding the first point, a 'lifeline' tariff is already in place in Cape Verde. In comparison with other most other SSA countries, this tariff is narrowly targeted towards the smallest users. In particular, the benefit is limited to consumers using less than 40 kWh per month. As a result, a consumer using 50 kWh per month pays the same price per unit as a much larger and wealthier customer consuming ten times as much. In principle, targeting the benefit of the lifeline tariff towards the poorest users is commendable. The downside is that it could make it more difficult to implement the needed tariff adjustments. As many other countries, Cape Verde has a national uniform tariff for electricity, in spite of very significant differences in the cost of supply between islands. Therefore, the overall financial viability of the utility depends on its ability to generate surplus with the most profitable customers (commercial users in islands supplied with HFO). Any decision regarding the scope of ELECTRA's operation (expansion of services towards less profitable users, sub-concessioning services for some islands) must be preceded by an analysis of its impact on ELECTRA's overall financial viability.

60. **Improving ELECTRA's governance.** As the major shareholder of ELECTRA, the GoCV has the responsibility to appoint board members possessing the adequate experience and commitment for the function, and to hold them accountable. In addition, while the primary responsibility lies with ELECTRA's management, it will also require an effective and sustained support of the GoCV (to combat fraud, disconnect users in default, eliminate illegal connections, and reduce the arrears of municipalities). The sectoral reform are unlikely to succeed without significant attention to governance, notably to aligning incentives; promoting transparency and benchmarking; enforcing the rule of law (especially to reduce non-technical losses).

61. **Lessons for the design of future Bank operations.** A general lesson is that projects should remain relatively simple. It appears important to limit the number of activities and their complexity to take into account the implementation capacity of the client, and the limitation on supervision resources. This is especially the case for components and sub-components that involve capacity and institution building, whose

implementation is lengthy and can occupy a large part of the dialogue with the authorities. One recommendation would be to focus on the institutional and regulatory issues that are critical for the success of the project. A general support for sector reform, on the basis of a weak commitment of the authorities, has limited probability of achieving the intended results. Another key lesson is to address the issues of affordability and financial viability at the project preparation stage. The implication is for instance to make sure that the promotion of renewable energy, either is cost effective for the utilities or users, or is supported by adequate transfer and subsidy mechanisms. This would also be the case for other investments that expand services in areas for which the utility is not able to charge cost-recovering tariffs (e.g. expanding access in rural areas for poor consumers). The fact that the provision of social services has a cost for the utility and that it needs to be able to cross-subsidy these services or be compensated by other means is essential. It appears also important to focus on investments that increase the efficiency of the utility (for instance by lowering generation cost, or water production costs). Such investments often have the benefit of expanding supply and lowering costs at the same time.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

62. A summary of the Borrower's implementation completion report is provided in Annex 7. The report provides primarily detailed information and explanations of what was accomplished by component. Among the few issues the report raises are delays in no-objection, the question of the skill mix of the supervision team, and the fact that several missions comprised just the TTL instead of a team of different experts such as procurement, social and environmental safeguards specialists (paragraph 44). The Borrower's ICR emphasizes the increases in coverage achieved during the life of the project and concludes that PEAS' contribution to the power, water and sanitation sectors was satisfactory.

(b) Co financiers

(no comments obtained yet)

(c) Other partners and stakeholders

(no comments obtained yet)

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

CV-Energy & Water SIL (FY99) - P040990			
Components	**Appraisal Estimate (USD millions)**	**Actual/Latest Estimate (USD millions)**	**Percentage of Appraisal**
POWER SECTOR REFORM & DEVELOPMENT	**9.15**	**5.04**	**55.1%**
REFORM AND DEVELOPMENT OF WATER SECTOR	**12.38**	**16.26**	**127.0%**
SANITATION DEVELOPMENT	**5.61**	**6.49**	**115.7%**
PROJECT COORDINATION AND MONITORING	**2.32**	**2.07**	**89.2%**
RENEWABLE ENERGY PROMOTION & DEVELOPMENT	**9.33**		
CV-GEF Energy & Water SIL (FY99) - P042054			
Components	**Appraisal Estimate (USD millions)**	**Actual/Latest Estimate (USD millions)**	**Percentage of Appraisal**
RENEWABLE ENERGY PROMOTION & DEVELOPMENT	**4.7**	**1.83**	**38.9%**
Total Baseline Cost	**43.49**		
Physical Contingencies	3.23		
Price Contingencies	1.27		
Total Project Costs	**48.00**	**31.69**	**66.0%**
PPF	1.50		

(b) Financing

Source of Funds	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
GOVERNMENT OF CAPE VERDE	**3.53**	**2.34**	**66.3%**
INTERNATIONAL DEVELOPMENT ASSOCIATION (IDA)	**17.52**	**16.18**	**92.5%**
ELECTRA, SA	**7.65**	**2.83**	**37.0%**
EUROPEAN UNION (EU)	**7.54**	**3.74**	**49.6%**
AUSTRIAN GOVERNMENT	**0.76**	**0.76**	**100.0%**
GLOBAL ENVIRONMENT FACILITY (GEF)	**4.71**	**1.83**	**38.9%**
OPEC FUND	**4.51**	**4.00**	**88.7%**
PRIVATE CONCESSIONAIRES	**1.77**	**0.00**	
Total Project Costs	**48.00**	**31.69**	**66.0%**

Annex 2. Outputs by Goals and Objectives

Project Goals, PDOs, GEF Objectives, and outputs at appraisal.	Key Performance Indicators	Project Outputs
Sector-related CAS Goals Promote sustainable development by encouraging public-private partnership in provision of economic infrastructure.	1. Full privatization of the power sector 2. Private participation in largest municipal water companies. 3. Government subsidy for ELECTRA is phased out by 2000	1. Partially achieved. ELECTRA was 51% privatized in 2000/2001, but ELECTRA's privatization failed and GoCV recuperated majority equity in 2006. 2. Thirteen (13) autonomous local utilities have been established. 3. No subsidies were provided to ELECTRA between 2000 and 2003 but from 2003, subsidies were to be provided again due to the lack of adequate adjustment tariff formula.
Global Environment Objective Mitigation of climate change through reduction of greenhouse gas emissions	4. At least 15 % of all electricity generated by renewable energy by the year 2003 5. Savings of 6,500 tons of petroleum products in 2004 (substituted with renewable energy), equivalent to 19,000 tons of C02.	4. No additional electricity generated by renewable energy by the year 2003. Renewable energy penetration in 2008 is less than 3%. 5. Maximum savings over the course of the project was 1,700 tons of petroleum products in 2006, equivalent to about 4,500 tons of CO2
Project Development Objectives (i) Improved access to energy, water and improved sanitation services with optimum use of renewable resources and promotion of private sector participation. (ii) Increased operational and end-use efficiency in the power and water sectors.	1. Household access to electricity increasing as follows (in %): 98 02 07 Praia 69 80 90 Mindelo 92 95 99 2. Household access to water increasing as follows (in %): 2000 02 07 Praia 30 50 65 Mindelo 57 80 90 3. Household access to sanitation increasing as follows (in %): 2000 02 07 Praia 8 10 30	1. Household access to electricity increased as follows (in %): 98 02 07 08 Praia 76 65 79 81 Mindelo 92 82 96 99 2. Household access to water increased as follows (in %): 2000 02 07 08 Praia 22 28 45 45 Mindelo 51 53 59 61 3. Household access to sanitation increasing as follows (in %): 2002 07 08 Praia 9 17 18
GEF Objectives Under GEF OP#6, remove the barriers gto grid connected wind generation and off-grid PV electric systems	4. The penetration of wind power on the three main grids (Praia, Mindelo & Sal) averages 19% by 2002. 5. 4,500 households gain access to electricity from off-grid renewable sources.	4. The penetration of wind power on the three main grids has decreased to less than 3% in 2008 (coming from existing wind farms) 5. No households connected to off-grid solar PV system.

	6. Cost recovery achieved for water distribution in 2002 (without subsidy) 7. Water losses declining as follows (in %): 2000 02 07 Praia 23 18 15 Mindelo 25 18 15	6. Not achieved 7. Water losses changed as follows (in %): 2000 02 07 08 Praia 29 34 33 38 Mindelo 24 23 30 25
Project Outputs (1) Privatized ELECTRA with improved commercial viability and establishment of an efficient & independent regulatory entity.	1.1 ELECTRA privatized by December 1999 1.2 More than 90% of committed investments by ELECTRA privatized materialize in a timely manner. 1.3 100% of former ELECTRA & EMAP employees trained by the privatized Electra by 2003. 1.4 Revenue targets for privatized ELECTRA are met. 1.5 89 electricity customers per ELECTRA employee by 2003, 1.6 Rate of return on Electra's assets increases to 8% in 2003 1.7 Power/water regulatory entity fully operational by 12/99	1.1 Contract with the Strategic Partner was signed in 2001 but ELECTRA's privatization failed and GoCV recuperated majority equity in 2006. 1.2 60% of planned investments by ELECTRA privatized were made between 2001-2006 (of which 85% in 2001 and 2002) 1.3 About 60% of employees had been trained by 2003. 1.4 Revenue targets for privatized ELECTRA were not set or met. 1.5 120 electricity customers per ELECTRA employee by 2003 (and 181 by 2007 and 184 by 2008) 1.6 Rate of return on ELECTRA's assets decreased to -2.6% in 2003 and -10 by 2007) 1.7 (1st) Power/water regulatory entity established by 2000. (2nd) entity operational by 2003, and fully operational by 2006.
(2) Increased electricity demand met by private sector involvement in developing grid-connected wind power and photovoltaic systems for decentralized rural areas.	2.1 7.2 MW new wind capacity is added to the existing system. 2.2 Photovoltaic systems commercialized by at least 2 private enterprises by 2002.	2.1 Not achieved. 2.2 Not achieved.
(3) Increased quantity, quality and reliability of drinking water for Praia and Mindelo, integrated multisectoral water resource strategy and	3.1 Per capita water consumption rising as follows (1/d) 2000 02 07 Praia 35 60 80 Mindelo 35 50 90 Assomada 42 50 50	3.1 Per capita water consumption changed as follows (1/d) 2000 02 07 Praia 65 62 47 Mindelo 41 41 34 Assomada na na 77

strengthened regulatory framework for water sector.	3.2 Water quality meets WHO Standards. 3.3 Satisfactory regulatory framework for water/sanitation sector in place by 12/99 3.4 Four secondary centers water utilities have been strengthened by 2000, and 8 by year 2007 3.5 Groundwater use and quality fully monitored nationwide by INGRH by year 2003	3.2 Water quality meets WHO Standards. 3.3 Satisfactory regulatory framework for water/sanitation sector in place since 2006 3.4 Five secondary centers water utilities have been strengthened by 2000, and 13 by year 2007 3.5 Groundwater use and quality fully monitored nationwide by INGRH since year 2003
(4) Increased coverage of sanitation systems in Praia and improved recovery of wastewater	4. At least 5% of wastewater in Praia is recovered for irrigation or other purposes.	4. None of wastewater in Praia is recovered for irrigation or other purposes.

Annex 3. Economic and Financial Analysis

(including assumptions in the analysis)

For the water investment component, the PAD had estimated the following financial and economic results based on projections of costs, revenues and benefits directly related to the project:

	NPV (CVE million)	IRR
Financial analysis	-326	3%
Economic analysis	797	42%

Due to the lack of project specific data for the ICR, we have calculated financial and economic NPV and IRR for the water business of ELECTRA as a whole. These indicators are based on overall investments in the water sector and incremental costs and benefits related to those investments since 1999. All analysis is in real CVE of 1999 and uses a 12% discount rate. Because of the different methodology used, these figures are not comparable to the estimates above. In the projections beyond 2008, it is assumed that water sales and operating cost increase by an average of 3% per year, while the tariff remains constant, all in real terms. The main difference between the financial and economic analyses is that the former relies on actual tariffs while the latter uses a higher estimated willingness to pay for piped water.

	NPV (CVE million)	IRR
Financial analysis	99	13%
Economic analysis	993	24%

On the basis of this analysis, the water investment component of the project (as a part of overall investment in the water sector of Cape Verde) is viable financially and economically. The number of ELECTRA water customers almost doubled from 16,534 in 2000 to 32,172 in 2008, significantly improving access to clean water. However, it appears that supply of clean water could not keep up with increased connections as consumption per capita dropped by 33% during the same period.

For the sanitation component, the PAD had estimated an NPV of 96 ECV million and an IRR of 27%. We were not able to calculate similar indicators for the ICR due to lack of data.

For the Power Sector Reform and Development component of the project, the main financial and economic benefits were expected to be derived from the restructuring and more efficient management associated with the privatization of Electra. Those benefits were not quantified in the PAD; instead, a theoretical discussion of the economic costs and benefits of utility privatization had been presented. Given that the privatization failed, that Electra was returned to full public ownership by 2008 and that several performance indicators have actually deteriorated, it is reasonable to conclude that this component has not been successful from financial and economic perspectives.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Philippe Durand	Lead Energy Specialist	AFTG1	Team Leader
Matar Fall	Lead Water and Sanitation Spec	AFTU2	Water & Sanitation Specialist
Noureddine Bouzaher	Senior energy Economist	AFTG1	Economic analysis
Richard Spencer		IENDP	Renewable energy
Susana Hristodoulakis			Project cost
Magaye Gaye			Financial Management
Agilson Perazza	Consultant		Environmental impact assessment
Serge Pagnucco			Financial Analysis
Supervision/ICR			
Noureddine Bouzaher	Senior energy Economist	AFTTG1	Team Leader
Sam O'Brien	Senior energy Specialist	AFTEG	Team Leader
Fanny Kathinka Missfeldt-Ringius	Sr Energy Econ.	AFTEG	Team Leader
Boris Utria		AFTEG	Team Leader
Stephan Claude Frederic Garnier	Senior energy Specialist	AFTEG	Team Leader
Amadou Tidiane Toure	Lead Procurement Specialist	SARPS	Procurement Specialist
Bourama Diaite	Senior Procurement Specialist	AFTPC	Procurement Specialist
Fabrice Karl Bertholet	Financial Analyst	AFTEG	Financial Analyst
Fily Sissoko	Sr Financial Management Specia	LCSFM	Financial Management
Luz Meza-Bartrina	Sr Counsel	LEGAF	
Matar Fall	Lead Water and Sanitation Spec	AFTU2	Water & Sanitation Specialist
Sylvia Michele Diez	Operations Officer	ETW	
Seynabou Thiaw Seye			Program Assistant
Lu Ha		AFTEG	Program Assisatnt

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY98		0.00
FY99		0.00
FY00		0.00
Total:		0.00
Supervision/ICR		
FY00	11	40.54
FY01	11	33.51
FY02	7	26.95
FY03	18	79.91
FY04	16	69.31
FY05	24	129.07
FY06	13	112.23
FY07	17	2.06
FY08	5	0.00
Total:	122	493.58

Annex 5. Beneficiary Survey Results *(if any)*

Annex 6. Stakeholder Workshop Report and Results *(if any)*

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

PROGRAM COMPLETION REPORT
April 17, 2009
Inacio Mendes Pereira
Unidade de Coordenação
PROGRAMA ENERGIA, AGUA E SANEAMENTO
(PEAS)

Summary in English

I. Introduction. PEAS was part of the 1997-2000 National Development Plan to reform the power, water and sanitation sectors. PEAS objectives were: improve the supply of power, water and sanitation systems; increase operational and end-use efficiency in the power and water sectors: lessen the barriers to the development of renewable energy resources; and foster sound management of water resources. The cost was US$ 48.0 million, financed by the GoCV, IDA, EU, Austria, OPEC, ELECTRA and Private Operators. It had 5 components.

II. Performance Indicators. PEAS had 26 Key Performance Indicators, five for sector-related CAS Goal, six for the PDO and GEF operational program objective, and 11 for project outputs.

III Purpose of the Report. To provide IDA and the GoCV a report of the implementation, the technical, financial and administrative coordination by UCPEAS, and the results obtained.

IV. Results and Impact of PEAS. A. Energy Sector - Sector reform included the passing of (new) laws – Lei # 54/99; 75/99; 5/99; and 76/99 - for power, natural resources, water and regulations. Privatization of ELECTRA was realized when EDP and IPE – Agua de Portugal - purchased respectively 31% and 20% of shares in ELECTRA in 2000. Between 2001 and 2006 an estimated US$ 79.0 million was invested in power generation and transmission and desalination (Table 4.1). However, ELECTRA's revenues stayed in the red (US$ 8.0 million in 1999 and US$ 18.0 million in 2007). Access to power expanded to 81% in Praia and 99% in Mindelo by 2008. The extension of the wind farms was aborted and wind power continued to contribute only around 3% nationwide. Regulatory reform was first managed by ARM and subsequently by ARE. Besides some 3,200 social connections and 300,000 low-energy lamps conservation made little headway.

B. Water and Sanitation Sector - Reforms of the water and sanitation sector included studies of the water tariff in Praia and the extension and rehabilitation of the primary and secondary infrastructure (some 20,000 meters of new pipes for water and 30,000 meters for sewerage). It included the construction of new reservoirs and replacement of water mains in Praia, Mindelo, Assomada, Tarrafal, Chao Bom, Ribeira da Prata and purchase of garbage trucks. The water treatment plant in Praia was

renovated and expanded, but operates below optimum levels. Thirteen new municipal utilities have been established to service customers in S. Nicolau, Santo Antao, Maio, Fogo, Brava. Technical assistance was extended to INGRH and to ELECTRA.

C. Program Management - The project coordination unit managed procurement, studies, technical assistance and coordination with other agencies. ELECTRA in 2006 completed the environmental clean-up of its generation sites (Table 4.8) and INGRH began testing water quality in 2004. The UCPEAS produced annual reports to inform Bank supervision missions about implementation progress. Supervision missions were however not bi-annual and several comprised only the TTL or the energy or sanitation specialist. UCPEAS also managed the project accounts which were audited annually by an independent auditor.

D Sector Financing - A total of US$ 37.22 million was disbursed of the US$ 48.0 million project cost estimated at appraisal. IDA financed 43.5%, the EU 22.6%, OPEP 10.7%, ELECTRA, SA 7.6%, the GoCV 6.2%, GEF 4.9%, and Austria 4.3% of the project cost.

V. Performance of Partners. IDA during implementation was slow in issuing no-objections for procurement. Also, the skill-mix of the teams was uneven after 2003 which slowed implementation. Finally, the frequent changes in TTL (four) also required that the UCPEAS had to bring TTLs up-to-date on implementation which was time-consuming. ELECTRA SA. performance was marked by delays with the planned investments in power and water and particularly with regard to the wind farm extension sub-project which had to be postponed and eventually cancelled. The OPEC Fund showed considerable flexibility in allowing its funds which were planned for Tarrafal to be used for the social connections in Praia. Both the EU and the Austrian Cooperation were effective and timely in their financing, implementation and supervision of their investments. The performance of the GoCV, municipalities, sector ministries and agencies was uneven. The UCPEAS performed satisfactory.

VI Global Evaluation. PEAS was well designed and was to make a substantial contribution to national development in the power, water and sanitation sectors. Initial implementation was slow, characterized by the issues surrounding the privatization of ELECTRA. By October 2002 at the MTR about 60% of the physical aspects of the project had been implemented, but only 33% of the project funds had been disbursed. The performance of ELECTRA held up implementation for most of the life of PEAS. Four extensions were necessary to compensate for delays. The water and sanitation component was well implemented except the operation of the water treatment plants. Sector reform was slow, but by completion most reforms had been put into place. At closing about 66% of the funds had been used which is moderately unsatisfactory.

VII Final Conclusions. The water and sanitation component has made a contribution to improving services in these areas. Also, the provision of power by ELECTRA has improved nation-wide. Municipal utilities have improved services in secondary towns and villages. Despite several constraints, particularly the need for further restructuring of

ELECTRA, PEAS has made a satisfactory contribution to the power, water and sanitation sectors.

VIII Lessons Learned. The solar power sub-project was poorly conceived in terms of responding to the socio-economic situation with the intended customers probably too poor to pay. It was also problematic to have the financing of the wind farm extension sub-project depend on a company which operated at a loss for years on end. Also, the limited expertise in municipalities to manage utilities and the investments in water and sanitation systems slowed the implementation. Procurement was delayed by having to wait for no-objection from the bank which took often several months. The extension of the closing date allowed the GoCV to delay its allocation of counterpart funds. Cape Verde had no experience or models for utility regulations it could use to establish the legal and regulatory framework for the sector. Local businesses benefitted from working with foreign ones in the public works projects. Also, the international procurement of plant and equipment was beneficial for local companies and ELECTRA to acquaint themselves with new technologies and standards.

Annexes: List of Studies conducted

Table 4.1	Investments made by ELECTRA, SA
Table 4.3a	Performance Indicators – power and water
Table 4.4	Performance Indicators – renewable energy
Table 4.8	Mitigating measures of the Environmental Protection Plan
Table 4.17	Overall achievement of PDO Indicators

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders
(no comments obtained yet)

Annex 9. List of Supporting Documents

1. Agencia de Regulacao Economica – ARE. Agency for Economic Regulation, Republic of Cape Verde, Legal Framework for Independent Regulatory Agencies.

2. Agencia de Regulacao Economica – ARE. Servicos Publicos – O que os utentes precisam saber?

3. Government of Cape Verde. Conselho de Ministros Decreto-Lei No 75/99, De 30 de Dezembro; Decreto-Lei No 54/99 de 30 de Agosto; Decreto-Lei No 30/2006 de 12 de Junho; Lei No. 41/II/84 de 18 de Junho.

4. Republica de Cabo Verde. Programa Energia, Agua e Saneamento, Unidade de Coordenacao. Relatorio – De desempenho do Programa, referente ao Ano de 2007, Janeiro de 2008.

5. Cape Verde – Energy and Water Sector Reform and Development Project Project Appraisal Document, Africa Region.

6. Development Credit Agreement, Energy and Water Sector Reform and Development Project between REPUBLIC OF CAPE VERDE and INTERNATIONAL DEVELOPMENT ASSOCIATION Dated June 3, 1999 CREDIT NUMBER 3205 CV.

7. GEF Trust Fund grant Number TF022458 Trust Fund Grant Agreement Energy and Water Sector Reform and Development Project
Trust Fund Grant Agreement Energy and Water Sector Reform and Development Project) between REPUBLIC OF CAPE VERDE and INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT Dated June 3, 1999.

8. Supervision Reports, ISRs and aide memoires.

9. Program Completion Report, Inacio Mendes Pereira, Unidade de Coordenacao, April 15, 2009.