



Project Completion Report

Policy-Based Loan

PCR

Project Name: Power Sector Support Program

Country: Cooperative Republic of Guyana

Sector/Subsector: Energy – Regulatory Framework Energy

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Loan Number(s), TC(s): 1938/BL-GY

Project Number(s): GY-L1014

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Acronyms and Abbreviations

CARICOM	Caribbean Community and Common Market
CDEEE	Corporación Dominicana de Empresas Eléctricas Estatales
CIS	Consumer Information System
D&E	Development and Expansion
EPA	Environmental Protection Agency
ESRA	Electricity Sector Reform Act
GOG	Government of Guyana
GPL	Guyana Power and Light, Inc.
GuySuCo	Guyana Sugar Corporation
GWh	Gigawatt-hour
HIPC	Heavily Indebted Poor Countries
IDB	Inter-American Development Bank
IMF	International Monetary Fund
ISO	International Standards Organization
IPP	Independent Power Producer
kW	Kilowatt
kWh	Kilowatt-hour
MW	Megawatts
MWh	Megawatt-hour
MOF	Ministry of Finance
OPM	Office of the Prime Minister
OSPT	Operating Standards and Performance Targets
PPA	Power Purchase Agreement
PCD	Project Concept Document
PCR	Project Completion Report
PM	Prime Minister
PPA	Power Planning and Associates, Ltd., or “PPA Energy”
PSSP	Power Sector Support Program
PUC	Public Utilities Commission
PUCA	Public Utilities Commission Act
SLRP	Strategic Loss Reduction Program
TOR	Terms of Reference
UAEP	Unserved Areas Electrification Program

Table of Contents

I. Basic Information	4
II. The Project.....	5
A. PROJECT CONTEXT	5
B. PROJECT DESCRIPTION	7
C. QUALITY -AT- ENTRY REVIEW (IF APPLICABLE).....	9
III. Results.....	9
A. OUTCOMES	9
B. EXTERNALITIES	12
C. DISBURSEMENTS.....	13
D. OUTPUTS.....	15
IV. Project Implementation	17
A. ANALYSIS OF CRITICAL FACTORS	17
B. BORROWER/EXECUTING AGENCY PERFORMANCE	18
C. BANK PERFORMANCE	18
V. Sustainability	18
A. ANALYSIS OF CRITICAL FACTORS	18
B. POTENTIAL RISKS	20
C. INSTITUTIONAL CAPACITY	20
VI. Monitoring and Evaluation	21
A. INFORMATION ON RESULTS	21
B. FUTURE MONITORING AND EX-POST EVALUATION	22
VII. Lessons Learned	22
Annexes.....	23

I. Basic Information

Title: Power Sector Support Program
Project No: GY-L1014 / LO-1938/BL-GY
Loan(s) Programmatic: ☒ Yes ☐ No

If yes, list related Project and Loan Numbers: GY-T1017, GY00065/LO-1103/SF-GY

Borrower: Cooperative Republic of Guyana
Executing Agency (EA): Ministry of Finance
Sector: Energy
Social Equity (SEQ): No
Environmental Classification: A, B, or C

There are no investments to be financed as a direct result of this Program. There are no environmental impacts expected and therefore, it is not necessary to undertake special environmental and social studies. According to the Environmental and Safeguard Compliance Policy (OP-703), this operation is not required to be classified.

Date of Board Approval: 12 Dec 2007
Date of Loan Contract Effectiveness: 06 Apr 2008
Date of Eligibility for First Disbursement: 30 Sep 2008

Months in Execution

*** from Approval:** 48
*** from Contract Effectiveness:** 44

Disbursement Periods

Original Date of Final Disbursement: 06 Apr 2012
Current Date of Final Disbursement: 06 Apr 2012
Cumulative Extension (Months): 0

On Alert Status

Is project currently designated "on alert" by PAIS? No

If yes, then why is the project on alert (DO, IP Ratings and/or relevant PAIS indicators): N/A

Comments on relevance of "on alert" status for this project (if applicable): N/A

Summary Performance Ratings				
DO	<input type="checkbox"/> Highly Probable (HP)	<input checked="" type="checkbox"/> Probable (P)	<input type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)
IP	<input type="checkbox"/> Very Satisfactory (VS)	<input checked="" type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (US)	<input type="checkbox"/> Very Unsatisfactory (VU)
SU	<input type="checkbox"/> Highly Probable (HP)	<input checked="" type="checkbox"/> Probable (P)	<input type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)

II. The Project

a. Project Context

This section reviews the project's background, reflecting the information available at the time that the project was originally conceived.

- Guyana is the largest country in CARICOM, occupying 215,000 square kilometers. Despite its relatively large size, Guyana has only a population of 741,000 people according to the 2002 census. The population is concentrated around the capital city of Georgetown whereas the interior rural areas are sparsely populated. Guyana is one of the least developed countries in the Americas.
- The primary economic sectors include sugar, mining (e.g. bauxite and gold), and agriculture. Annual economic growth averaged only 0.3 percent during 1998- 2005, but grew at approximately 5 percent in 2006, reflecting a recovery in private sector credit, preparations for the Cricket World Cup, higher FDI flows, high commodity prices and large inflows of remittances (24 percent of GDP). The IMF reported in 2007 that the recent macroeconomic developments in the Guyanese economy were encouraging and that the outlook for continued growth was positive.
- The power system of Guyana is comprised of the Demerara Interconnected System and the Berbice Interconnected System, with a weak transmission link between them, and isolated systems along Essequibo Coast at Anna Regina, Leguan, Wakenaan and Bartica. The country is highly dependent on oil and diesel imports to meet energy demand.
- GPL, a state-owned, vertically integrated utility, serves the majority of the country. The total installed capacity of GPL at the start of the project was 113 megawatts (MW), of which 92.5 MW were available. Approximately 515 Gigawatt hours (GWh) are produced annually by the company.¹
- In 1999, the Government sold a 50 percent stake in the utility to a consortium of investors. Due to financial troubles stemming from poor collections, rising oil prices and challenges in the operational management of the company, the consortium sold back its shares to the Government in 2003. The investor group had been tasked with reducing technical and non-technical energy losses, losses actually increased to above 40 percent.
- GPL made hydropower generation a priority in its Development and Expansion Plan 2007-2011, with a 100MW hydroelectric plant expected by 2011, and agreed to purchase power from a 20MW bagasse power plant developed by GuySuCo as an IPP. The hydropower plant (Amaila Falls) is still in planning, although GuySuCo's IPP is operational.
- To address the high electric losses and high costs, GOG and GPL have targeted loss reduction as a priority. Support for this priority is included within the framework of the Unserved Areas Electrification Program (UAEP), funded by the IDB. The initiatives undertaken by GPL include: the replacement of defective meters; removal of illegal connections; technical assistance for monitoring loss reduction activities; and implementation of a new customer information system.

¹ As of 2011, Guyana's total installed capacity was 165 MW, consisting primarily of oil-fired generators. Gross generation in 2010 totalled 626 GWh, of which 90% was supplied by GPL, and 10% was supplied by an IPP owned by GuySuCo.

Guyana's power sector faces a range of difficult operational, institutional, regulatory and business challenges. The specific challenges that motivated the Power Sector Support Program are summarized below using language excerpted from IDB's May, 2007 Project Concept Document PCD .

- **Operational challenges:** Among all the threats to the sector's sustainability, electricity losses deserve the most urgent consideration and are the focus of this operation. Losses, defined as the difference between energy generated and energy effectively billed to customers, averaged between 39.6% and 42.7% in the period 2001-2005. Of these, it was estimated that 28% of a total of 40% losses were non-technical and could be estimated as 11% from illegal connections, 7% from billing problems and 11% from metering issues. The inadequacy of the meters, lack of meter certification, shortage in training of meter readers, and inherent social tolerance of theft and fraud, make illegal abstraction an easy option for customers; the billing system cannot perform to the standards expected and relies on poor data and weak controls.
- **Institutional challenges:** The country does not have a long-term planning horizon or a policy initiative for the power sector. A short-term focus cannot provide for the establishment of a strategic direction and plan that can be implemented with available resources. The absence of an updated power sector policy that sets the environment for sector development and addresses the apparent social tolerance of theft and fraud has hindered the PUC and GPL from establishing long-term priorities, and impeded other private sector participation. Although relatively recent legislation governs the sector, that legislation was created in the context of private sector management of GPL and today requires updated concepts on tariffs, development of the sector, competitiveness, and losses, as well as in governance, transparency and reporting.
- **Regulatory challenges:** The PUC has experienced technical, financial and other weaknesses affecting its operational capacity and effectiveness to regulate the sector. Currently the PUC regulates the sector using only a single chairman and four members appointed by the OPM. PUC resources and technical capabilities have been further stretched as it also regulates the growing telecommunication sector.
- **Business challenges:** Due to limited access to external financing GPL has to finance its investment needs by internally generated funds. As long as GPL must be financially self-supporting, its high level of electricity losses must be compensated with higher tariffs. Attempts to negotiate PPAs have resulted in mixed results. The initiatives to engage large industrial loads like alumina processing have failed. When combined with the already high production cost due to fuel prices and inefficient generation technology, excessive electricity losses result in extremely high prices for power. While Guyana's electricity use is relatively low on both absolute and per capita bases, GPL's high tariff level (24 US¢/kwh) is a major constraint for the development of energy demand. The tariff structure is distorted and does not reflect supply costs, with average industrial rates higher than residential rates. The US\$35 million fine PUC levied upon GPL in July 2002 when the private investor did not address the excessive losses is a concern to potential investors. Unresolved, this situation could have threatened GPL's financial health and increase its credit risk.

b. Project Description

i. Development Objective(s)

The Power Sector Support Programme (PSSP) was established to support the efforts of the GOG to promote a more sustainable and efficient energy sector. The specific development objectives for the project are listed below:

1. Strengthen the regulatory and legal framework to contribute to a more effective power sector with increased efficiency, transparency and accountability.
2. Contribute to more efficient and effective development of the power sector with a long term strategy
3. Strengthen utility's capabilities to manage loss reduction program by contributing to improvements in corporate governance, transparency and accountability
4. Coordination and consistency of efforts to allow for effective overall loss reduction
5. Building consensus on the benefits of a sustainable power service

These development objectives remained consistent in the Loan Proposal, Loan Contract, and project performance monitoring reports and the project was not reformulated.

ii. Project Description

The Program provided financing to execute the following three components.²

Component 1 - Promote institutional, legal and regulatory reforms

Component 2 - Strengthen the Power Utility Company Capabilities

Component 3 - Promote Sustainable Electric Loss Reductions

Component 1's objectives included a) strengthen the regulatory and legal framework to contribute to a more effective power sector with increased efficiency, transparency and accountability and b) contributing to more efficient and effective development of the power sector with a long term strategy. Component 1 provided financing to identify and implement revisions and enhancements to the legal and regulatory framework, with a focus on the Energy Sector Reform Act (ESRA), the Public Utilities Commission Act (PUCA), and the GPL Licence. These key activities included:

- PUCA. The PUCA Amendment was to include provisions on increased PUC funding, more transparent reporting and analysis, strengthened enforcement mechanisms, IPP review, appointment of regulators, employment of experts, and loss reduction.
- ESRA. The ESRA Amendment was to include provisions on reporting and disclosure, tariff, rate of return, accounting methodology, subjects/timeline in D&E plans, utility's governance and categorization of GPL
- GPL Licence. As originally conceived, the amendments would include reporting and disclosure, tariff, rate of return, accounting methodology, subjects/timeline in D&E plans, and utility's governance.
- Quality of service monitoring and improvement. In order to support the enhanced regulatory emphasis on tracking and reporting (i.e. the Operating Standards and

² The components remained consistent across the Loan Proposal, Loan Contract, and PPMR.

Performance targets (OSPTs) and Customer Service Standards), GPL committed to develop a data collection and reporting system for its key performance metrics and to measure and monitor customer satisfaction over time.

- GPL's outstanding fine. GPL incurred a substantial PUC fine for not meeting its obligations during the period that it was partially owned by private interests. This fine remained although the government has resumed full ownership of GPL. GPL had not paid the fine, however, and its presence on GPL's books had a concern to external partners (e.g. development institutions and project developers). A condition of the PSSP was that the issue of the fine be resolved.
- Tariff restructuring. The structure of Guyana's electricity tariffs has important implications for the financial health of the utility, the cost of living for customers, and for economic performance of commercial and industrial companies. The project initially envisioned the establishment and implementation of a new tariff structure in order to improve GPL's financial position and reduce the burden on non-residential customers, among other goals.
- PUC governance. In parallel to changes to GPL's reporting and performance requirements, the legal and regulatory reforms also sought to strengthen the position of the PUC as the electricity sector regulator. In addition to changes to strengthening the PUC's authority to assess fines and resolve complaints by amending PUCA, the project also required that the PUC prepare and approve strategic and annual plans.
- Power sector policy development. The previous power sector strategy for Guyana was from 1994 and was out of date. It was determined that an updated power sector policy was required in order to take into account international market realities (e.g. dramatic increases in oil prices), and Guyana's evolving energy sector. GOG was to commission a power sector study as part of the project, with the goal of establishing a power sector policy implementation plan.

Component 2 sought to strengthen the utility's capabilities to manage a loss reduction program by contributing to improvements in corporate governance, transparency and accountability. The achievement of the objective was expected to be completed through activities including, among others: establishment of new corporate bylaws and/or other corporate instruments to include, a revised Board composition with technical director, corporate governance standards and procedures, corporate codes, and operating procedures.

Component 3 objectives included a) coordinate consistent efforts to allow for effective overall electricity loss reduction and b) build consensus on the benefits of a sustainable power service. To achieve these objectives, financing was provided to support GPL's efforts to install a Customer Information System to further streamline and standardize billing systems, to support efforts to monitor progress in loss reductions against specific targets over time, and to execute public outreach and education programs related to loss reductions and energy conservation.

- CIS. GPL's existing customer information and billing systems were twenty years old, were not fully computerized, and lacked coherent integration. As a result, GPL committed to moving forward with the procurement and installation of a new CIS system.
- Electricity loss reduction and monitoring. An international consulting firm was retained to conduct a series of reports monitoring progress in loss reduction over time, as well as to track the progress that GPL was making in achieving milestones related to managing its internal loss reduction processes. GPL's Board was also encouraged to actively monitor the

loss reduction activities, including reviewing the Loss Reduction Plans included in GPLs D&E plans, on-going reporting from GPL management to the Board on loss reduction efforts and challenges to achieving loss reductions, and discussions of loss reduction efforts at the Board level. IDB also commissioned separate studies discussing losses in Guyana at the outset of the project and a review of loss reduction efforts following the conclusion of PPA's monitoring.

- Education and Outreach Programmes. In parallel with the direct loss reduction efforts undertaken by the utility, GPL also launched a series of public outreach and educational programmes designed to raise awareness of the importance of conserving energy and reducing losses.

a. Quality -At- Entry Review (if applicable)

Not applicable

III. Results

a. Outcomes

ACHIEVEMENT OF DEVELOPMENT OBJECTIVES (DO)	
Development Objective(s) (Purpose)	
1. Strengthen the regulatory and legal framework to contribute to a more effective power sector with increased efficiency, transparency and accountability	
Classification: P	
<u>Key Planned Outcome Indicators</u> 1.1. Updated legal and regulatory framework (PUCA/other related legislation) is fully enacted with operating regulations, where necessary, implemented for at least six consecutive month <u>Baseline</u> 0 (12 Dec 2007)	<u>Outcomes Achieved</u> 1 (3 June 2011) <u>End of Project</u> 1 (31 Dec 2010)
2. Contribute to a more efficient and effective development of the power sector with a long term strategy	
Classification: P	
<u>Key Planned Outcome Indicators</u> 2.1. Development of a sector strategy <u>Baseline</u> 0 (12 Dec 2007)	<u>Outcomes Achieved</u> 1 (1 June 2011) <u>End of Project</u> 1 (31 Dec 2010)

3. Strengthen utility's capabilities to manage loss reduction program by contributing to improvements in corporate governance, transparency and accountability			
Classification: P			
<u>Key Planned Outcome Indicators</u>		<u>Outcomes Achieved</u>	
Minutes of the board reflect procedures derived from new corporate administrative tools		1 (27 May 2011)	
<u>Baseline</u>	<u>End of Project</u>		
0 (12 Dec 2007)	1 (1 Oct 2010)		
4. Coordination and consistency of efforts allow for effective overall loss reduction			
Classification: P			
<u>Key Planned Outcome Indicators</u>		<u>Outcomes Achieved</u>	
Electric losses are under 20.4% 5 years after program execution. ³		31.3% (12 Dec 2010)	
<u>Baseline</u>	<u>End of Project</u>		
34.5% (12 Dec 2007)	20.4% (1 Oct 2010)		
5. Building consensus on the benefits of a sustainable power service			
Classification: P			
<u>Key Planned Outcome Indicators</u>		<u>Outcomes Achieved</u>	
Customer survey results indicate increase of in willingness to pay and social awareness of full cost of electric losses.		2 (1 March 2011)	
<u>Baseline</u>	<u>End of Project</u>		
0 (12 Dec 2007)	2 (1 Oct 2011)		
Reformulation			
[X] N/A			
PPMR Retrofitting. Indicate if and when the PPMR was retrofitted and explain any changes resulting from this exercise.			
[X] N/A			
Summary Development Objective(s) Classification (DO):			
[] Highly Probable (HP)	[X] Probable (P)	[] Low Probability (LP)	[] Improbable (I)

³ Three years after the start of the project, losses have not reached the 20.4% target. It is expected that losses will continue to decrease over the full five year window envisioned in this progress outcome as a result of GPL's SLRP.

Briefly justify DO classification, based on degree to which planned targets were met, explaining the differences between planned and achieved outcomes as well as any other relevant factors. Include references to evidence that can support these results. Discuss the impact (timing and amount) of the financing on the country's financial program.

- 1.1. Strengthen the regulatory and legal framework to contribute to a more effective power sector with increased efficiency, transparency and accountability. The planned targets were met. The legal and regulatory framework was enacted, with amendments to PUCA, ESRA, and to the GPL's Licence. The legal and regulatory framework revisions were broader what was initially anticipated by the project and included a focus on laws related to prosecution of illegal connections and meter tampering. In addition, GPL implemented its quality and performance monitoring program, GPL's outstanding fine was resolved⁴, and the PUC completed and began acting on its strategic plan. GPL also demonstrated that it is committed to moving forward with a grid upgrade project financed by the China National Machinery Import and Export Corporation at will achieve automatic voltage regulation, the integration of the Demerara and Berbice grids and the improvement of service quality through the automated management of the DBIS when completed. The tariff restructuring target was not met, but the condition was waived.
- 2.1 Contribute to a more efficient and effective development of the power sector with a long term strategy. The planned target was met in that a power sector implementation strategy was developed, adopted by the Cabinet, and integrated into the GPL's D&E plan.
- 3.1 Strengthen utility's capabilities to manage loss reduction program by contributing to improvements in corporate governance, transparency and accountability. GPL retained a consultant to make recommendations related to corporate governance enhancements, which GPL used to inform a revision of its governance instruments. GPL enacted all of the corporate governance enhancements that were recommended and agreed to.
- 4.1 Coordination and consistency of efforts allow for effective overall loss reduction. The software system was initially bid out in 2007 and the bid was awarded to Advance Utility Systems, who installed the system in June, 2009. The hardware system was procured separately and the entire system became operational in May of 2010. GPL reported during the project that there were initially challenges related to GPL staff comfort with transitioning to a fully computerize system from a system that had previously been partially manual. GPL also noted that the benefits of the system were realized early in the system's implementation. GPL recorded successful reductions from 38% to 34%, but then loss reduction stagnated, decreasing from 34% in 2007 to 33.6% in 2010, whereas the target estimated during program design was 25.5%. PPA Energy revised the loss reduction targets

⁴ The PUC issued Order No. 3/2002, which fined GPL for not "providing an adequate and or reasonable and or efficient service as a consequence of which consumers suffer losses." Specifically, the Commission found that GPL had caused consumer losses totalling GY\$1.3 billion and ordered that GPL repay consumers. GPL subsequently appealed the Order and did not credit consumers in response to the fine. In 2010, GPL sought a review of the Order, stating that the fine was complicating and both an IDB PBL as well as financing for the Amaila Falls Hydro project from the Chinese Development Bank. GPL argued that between 2003 and 2009, the utility has accumulated foregone revenues in the sum of approximately GY\$20 billion by not increasing tariffs to their maximum levels as allowed by its Licence. If GPL had enforced its right to increase rates to reflect "sky-rocketing" fuel prices during the past several years, tariffs would have been about 70% over and above the current domestic tariff, or about \$80.00 per kWh. Mr. Patrick Dial of the Guyana Consumers Association and Guyana Consumers Advisory Bureau supported GPL's application. In March 2010, the PUC recalled Order No. 3/2002 under Order No. 1/2010 under which it agreed that the amount of the fine should be settled by applying the amount of the fine against the GPL's foregone revenue account.

upwards twice during the course of the project, but each time the targets were missed. IDB approved a waiver in recognition of the fact that increases in technical losses eroded some of non-technical loss reductions and based on the effort and engagement in loss reduction activities exhibited by GPL and by GOG.

5.1 Building consensus on the benefits of a sustainable power service. GPL's supported three parallel educational programs focusing on outreach to the general public about the importance of energy conservation and energy efficiency, programming targeting students in schools, and outreach and public relations regarding pre-paid meters. The school-based programs also included structured presentations for students, and a series of debate competitions focusing on the merits of energy efficiency. Customer surveys revealed modest improvements in key indicators during the duration of the program, however, it is important to note that quarterly surveys to assess customer satisfaction of its service, and the monitoring of the company's performance on its Operating Standards and Performance Targets, helped to improve a systematic and periodical data collection practice as well as to facilitate public access to this information. The reports in this regard were posted on GPL's and OPM's websites and include:

- a) GPL's Customer Service Standards 2011, on its quality of performance of service.
- b) Customer Satisfaction Survey Report.
- c) Customer Focused Survey/Bill Survey.

Country Strategy. Given the results described above, briefly discuss how the project contributed to IDB's strategy in the country.

The Country Strategy for Guyana (GN-2228-1 and its update GN-2257-9) promotes growth oriented programs and policies. Reinforcement through the strengthening of governance, security and justice, public sector systems and social programs will contribute to poverty reduction in Guyana. To implement the strategy, emphasis is placed on three pillars: achieving sustainable economic growth; improving governance and public sector efficiency; and strengthening social programs.

The project contributed to the achievement of sustainable economic growth by strengthening the capacity and capability of GPL to reduce losses and operate in a more efficient and transparent manner. Loss reduction activities should ultimately enable to GPL to reduce or otherwise rebalance its electricity tariffs, thereby supporting economic development by enabling the private sector to become more competitive. Technical and non-technical loss reduction also helps create the conditions for a more reliable and stable grid, which will also support sustainable economic growth. The legislative, regulatory, and corporate reforms related to ESRA, PUCA, the GPL Licence, and GPL governance instruments also contributed to more transparent and accountable governance, as well as improved public sector efficiency. The enhanced capabilities of government and GPL to enforce the laws related to illegal connections will also have security and justice implications

b. Externalities

Based on reviews of project documents and interviews with relevant stakeholders, there were no unintended positive or negative externalities that resulted from this project during the project execution.

c. Disbursements

DISBURSEMENT TRANCHES				
Tranches	Amount (US\$000)	Expected Date	Actual Date	Waiver Granted Yes/No
1	2,000	05 May 2008	30 Sep 2008	No
2	5,000	31 Dec 2009	16 Dec 2010	Yes
3	5,000	30 Jun 2011	16 Nov 2011	Yes

Briefly explain any differences between expected and actual dates. If a waiver was authorized, please briefly describe condition waived and its justification.

Differences between expected and actual dates

Overall, the project was completed one month later than expected. The second tranche activities took longer than initially projected, whereas the third tranche activities took less time than expected. The delays during the second tranche disbursement resulted from the fact that consulting assignments required more time and the original timelines did not accurately reflect the amount of time required to pass new legislation. There were also delays as a result of turnover in the project coordinator position and staff turnover at GPL.

Waivers and justification

Tariff restructuring. A tariff study was conducted and did not conclude the need for a new tariff structure to replace the existing one. The possibility for studies' outcomes to vary significantly from the anticipated results was identified as a risk in "section IV Viability and Risk" of the Loan Proposal (LP). Nevertheless the GOG carried out the necessary study and benefitted from the added value of conducting a thorough review and deep discussion of its tariff structure.

The study concluded that a set of four recommendations should be considered: i) agreement between GPL and the GOG (as the major shareholder) to allow for a lower return on equity, or to waive the statutory revenue condition specifically for years 2011-2014, in order to implement the proposed reduction in tariffs; ii) modify the tariff schedule: (a) by introducing a high voltage tariff option by the date that the interconnection with the Hydropower Amaila Falls (AF) becomes effective; and (b) by eliminating several government-specific tariffs and reclassifying these customers according to more general categories; iii) implement the GPL rebalancing plan once the AF's power purchase agreement is agreed with the project sponsors; and iv) adjust the commercial tariff to a value between the domestic and industrial levels. These recommendations were accepted by GPL's Board and the OPM. Instead of a new tariff structure, GOG committed to lower the approved return on equity used to calculate the rates and that the rates be rebalanced after the Amaila hydropower plant is constructed.

The IDB concluded that since the tariff study did not find that tariffs could be adjusted, the policy conditions related to the second and third tranche could therefore not be fulfilled. Based on the alternative recommendations and path forward proposed and adopted by the GOG, however, the IDB granted a waiver that enabled the subsequent tranches to be disbursed.

Electricity loss reduction. the "Evaluation and Prioritization of Loss Reduction Investments" study was completed in 2006 and served as the basis for the strategy to address the electricity losses

problem. Commercial losses were deemed to be the core of the total losses and priority was assigned to this segment. Among the high priority actions identified by the study were the removal of illegal connections, the replacement of faulty and tampered meters and the replacement of the billing system. GOG implemented many of the actions consistent with the study, including the deployment of new meters for large consumers, the creation of a dedicated unit within the utility company to address losses, and intensification of the persecution of electricity theft.

GPL initially recorded successful reductions from 38% to 34%, but then loss reduction stagnated, decreasing from 34% in 2007 to 33.6% in 2010, whereas the target estimated during program design was 25.5%. Several factors limited the overall estimated success of loss reduction initiatives, after the initial successful reduction. These included factors such as the increase of technical losses even as non-technical losses decreased as well as the reconnection of illegal connections that had been removed. During the first quarter of 2010, GPL reorganized and focused its efforts through the implementation of a new Strategic Loss Reduction Program (SLRP), which included (i) systematic raids to reduce illegal connections; (ii) replacement of defective meters and meter upgrades, including installation of meters for large consumers, meter testing on location using portable test bench, and the installation of pre-paid meters; (iii) support of targeted reports and better information management from the new Customer Information System; (iv) investigation of anomalous consumption patterns, including zero consumption and low consumption. Initial implementation of the SLRP showed energy savings of almost 5 GWh during the first quarter of 2010, equivalent to 0.8% of the energy generation. GPL has also reevaluated the needs and priority for specific upgrades to the distribution infrastructure that should improve its capacity to curb losses, both technical and commercial. Some of these upgrades were originally classified as medium or low priority in the Loss Reduction Investments study from 2006, but are now deemed as important to improve performance.

The risk assessment developed during preparation of this PBL identified difficulty with curbing electricity losses as the largest single risk, and highlighted electricity theft as one of the reasons that could impact adversely the utility's achievement of loss reduction targets. IDB concluded that using electricity losses as a success indicator for the project failed to reflect the commitments and efforts of the GOG and GPL to curb electricity losses, though it provided a measure of the magnitude of the challenge.

The IDB found that GPL had "implemented of the agreed actions over the past three years consistent with those findings to attempt to reduce energy losses" and that its efforts were "continuous and sustained during this period." IDB also concluded that the GOG and GPL remain committed to the objective of loss reduction and that the GOG has made a good faith effort to address losses. As a result of the stakeholder efforts to address losses in the face of complex challenges (and some circumstances beyond their control), IDB requested a waiver from the condition that GPL meet a specific loss amount over time.

d. Outputs

IMPLEMENTATION PROGRESS (IP)	
Thematic Areas/Components:	Key Conditionalities/Output Indicators:
1. Thematic Area/Component 1: <i>Promote institutional, legal and regulatory reforms</i> <u>Classification:</u> HS	<u>Outputs Achieved</u> <ul style="list-style-type: none"> Public Utilities Commission (PUC) legislation updated Public Utilities Commission (PUC) institutional strengthening implemented ESRA legislation updated GPL Licence updated GPL contingent liability due to PUC paid GPL data collection and reporting system implemented New power sector policy published
Briefly explain differences between planned and actual outputs (if applicable). <ul style="list-style-type: none"> GPL tariff structure is revised and adopted The GPL tariff structure was not achieved, but the condition was waived. [] N/A	
2. Thematic Area/Component 2: <i>Strengthen the Power Utility Company Capabilities</i> <u>Classification:</u> S	<u>Outputs Achieved</u> <ul style="list-style-type: none"> GPL corporate administrative tools (bylaws, governance standards and procedures, corporate codes, board composition, and operating procedures) established
Briefly explain differences between planned and actual outputs (if applicable). [X] N/A	
2. Thematic Area/Component 3: <i>Promote Sustainable Electric Loss Reductions</i> <u>Classification:</u> S	<u>Outputs Achieved</u> <ul style="list-style-type: none"> Campaign
Briefly explain differences between planned and actual outputs (if applicable). <ul style="list-style-type: none"> Electricity losses reduced The target for reduction in electricity losses was not achieved, but this condition was waived. [] N/A	
Summary Implementation Progress Classification:	
[] Highly Satisfactory (HS) [X] Satisfactory (S) [] Unsatisfactory(U) [] Very Unsatisfactory (VU)	

In addition to the project outputs, it was also expected that a series of outcomes and related indicators would be tracked. However, the project did not establish baseline values for these indicators and did not gather data over time. A retroactive review of GPL and PUC documents was conducted during this evaluation to determine if baseline data for these indicators could be identified. In general, it was found that useful baseline data was not available. If the IDB determines that these data are necessary, it is recommended that more in-depth research into historical documents be conducted. Such research was beyond the scope of this evaluation. The lack of baseline data was noted in the PMR documents which stated that a means of verification for many of the outcomes was not established at the outset of the project. The example given in the PMR is that an intended outcome of the project was to increase energy awareness among customers by 20% as a result of outreach programs. Since a baseline for this indicator was not established, however, it was not possible to measure a 20% improvement. The results of document survey to identify baseline indicators conducted during the evaluation are summarized below:

- Number of complaints resolved by the PUC increases by 20%. The 2007 PUC annual report specifies that the total number of “issues addressed” was 349. The 2011 annual report states that the total number of “complaints resolved” was 409. Assuming that issues addressed are the same thing as complaints resolved, the number of complaints resolved (across all sectors) increased by approximately 17%.
- At least 10 large customers added to GPL’s network. It is not clear how “large consumers” was defined at the outset of the project. GPL’s 2007 annual report is not published online. Based on the 2006 annual report, GPL had 11,357 commercial and 449 industrial customers. At the end of 2011, GPL had 14,241 commercial and 561 industrial customers. It is not clear how many of these additional customers count as “large.”
- Frequency of non-schedule outages reduced by 20%. Identifying the baseline for this indicator retroactively was not possible using the documents available during the evaluation period. The 2007 annual report from the PUC states that: “the engineering division needs to construct a technical profile of the company so that it can make an informed judgment on GPL’s quality of service and whether this service confirms to the Operating Standards and Technical Performance... Regrettably we have to report that GPL has been less than forthcoming with the information requested making the work of the Commission difficult. It is to be hoped in the new- year that GPL will recognize its corporate responsibility to the public and the regulatory body and comply with its statutory duties.” At the end of 2011, GPL publicly reported its System Average Interruption Frequency Index (i.e. average # of interruptions per customer), which was 156.22 against a target of 140.
- Number of complaints on quality of service reviewed by the PUC decreases by 10%. In its 2007 annual report, the PUC categorizes complaints as related to regular matters, tampering cases, and miscellaneous matters. Based on these categorizations, it is unclear how many of the complaints were related to quality of service and therefore what the baseline would be. The PUC’s 2011 annual report cites that there were 31 complaints related to “technical issues”, but it is again unclear whether these were related specifically to quality of service.
- Customer survey results indicate increase of 20% in willingness to pay and social awareness of full cost of electric losses and customer satisfaction surveys for connections, billing, and service show a 20% increase in satisfaction. As noted in the introduction to this review above, no baseline for willingness to pay, social awareness, or customer satisfaction was established at the beginning of the study and as a result, progress towards these indicators could not be measured.

IV. Project Implementation

a. Analysis of Critical Factors

Positive Factors

- Engaged government stakeholders. Based on interviews with major stakeholders, consultants, and the IDB, it is clear that the organizations impacted by the project were engaged in project development and execution. Moreover, during the evaluation of the project, it became clear that the new plans, powers, and authorities established during the project were being utilized. The level of stakeholder engagement and commitment was a critical factor in the success of the project. An exception to this is the power sector implementation strategy. In interviews with key stakeholders, it is unclear how the policy recommendations will be translated into concrete action and unclear which government institution “owns” the power sector strategy.
- Project management. The GOG’s management and coordination of the project helped ensure that the tasks were completed within the three-year timeframe envisioned for the project. On the IDB side, the core project team effectively identified risks that could impact the project from the outset – of the two waivers that were granted, they both related to issues that project planning documents had highlighted as potential concerns. In each case, the conditions related to the risks were unable to be fulfilled. However, national stakeholders and the IDB demonstrated flexibility in reacting to and learning from the challenges and adjusting the project accordingly.
- Sound design. The project documents and project strategy developed by the IDB reflected a coherent and logical structure for three closely inter-related components. The outputs of each component were designed to achieve or contribute to meaningful sector progress. Some of the project consultants commented that some TOR elements were structured in a manner that did not reflect a full understanding of the specifics of Guyana’s energy sector, but these issues were resolved during consultancy implementation.
- Useful consultancies. The evaluation found that the project consultancies generally delivered satisfactory and substantive results that directly contributed to the fulfilment of policy conditions. The results of the studies either directly formed the basis of amendments and planning or provided reference points which informed key stakeholder decisions.

Negative Factors

- Difficult challenges related to non-technical and technical losses. There were a broad range of factors that contributed to the inability of the project to achieve its target loss reductions. These included a combination of internal management challenges at GPL during the course of the project (e.g. management turnover, poor data maintenance, delays in CIS and ITRON meter procurement), repeat illegal connections and meter tampering violations (e.g. re-establishing illegal connections after raids remove them), a lack of capacity to prosecute offenders, and increases in technical losses (which eroded gains made in the reduction of non-technical losses). It was also noted that the use of an aggregate loss target to judge progress in loss reduction may not be an appropriate metric to evaluate non-technical loss reduction activity. IDB staff and follow-on evaluations supported by IDB noted that GPL had pursued its loss reduction program and had come close to meeting most of its SLRP targets in terms

of volumes of meters replaced, new ITRON meters installed, raids conducted, etc., but that these efforts were not yet sufficient to drive losses further down.

b. Borrower/Executing Agency Performance

Borrower/Executing Agency			
<input checked="" type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

c. Bank Performance

Bank Performance			
<input checked="" type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

V. Sustainability

a. Analysis of Critical Factors

The critical factors related to the sustainability of the results achieved throughout project execution included the following:

- Government commitment and ownership. There is sufficient government commitment and ownership to sustain the reforms and institutional changes achieved during the project. The reforms were generated in close collaboration with the government and affected stakeholders. The reforms also built upon the recommendations and results of related projects and initiatives and represent continuity in attempts to achieve both national priorities and IDB country and sector goals. The reforms also represent the implementation of good practices related to governance and accountability and appear to have been welcomed by stakeholders without significant controversy or pushback. The reforms are also codified in law as well as in the Licence, which means that they are embedded into the institutional “DNA” of the relevant entities.
- Economic viability. During the course of the PSSP, the macroeconomic conditions in Guyana were evaluated on an ongoing basis by both the IDB and the IMF. Both institutions concluded that the macroeconomic conditions were sound and that the outlook for continued growth of Guyana’s economy was generally positive. Deterioration of economic conditions could impact certain activities that are related to the project. Additional increases in oil prices, for example, could place additional pressure on GPL and constrain its abilities to make new investments in technical and non-technical loss reduction strategies. With regard to the core project activities, however, the gains achieved during the PSSP are generally not vulnerable to significant changes to the current economic condition. An economic downturn, for example, is unlikely to trigger an amendment to overturn the PUCA or ESRA amendments.
- Financial viability. Overall, most of the gains made during the project appear to be financially sustainable. The PUCA reform, for example, was enacted explicitly to ensure the financial viability of the PUC’s new responsibilities, whereas the resolution of GPL’s fine was designed to strengthen GPL’s financial position. Many of the other reforms represent changes in existing practice, but without significant new financial burdens for affected institutions. There are three areas related to financial viability which are at present unclear. First, it is uncertain whether the power sector implementation strategy will create new financial burdens on im-

plementing agencies when responsibilities are further clarified (see Institutional Capacity below). Second, arrests and prosecutions related to illegal connections may increasingly face financial constraints related to the number of judicial staff available to process cases. The capacity of the judicial system to process illegal connection cases is constrained and there are likely not sufficient resources budgeted to resolve the bottleneck through the creation of new institutions or additional judicial personnel. Third, it should be noted that a new national budget had not yet been approved as of the drafting of this report. As a result, it is unclear whether there will be any changes to government budgets that may reduce staffing at the institutions involved in the PSSP.

- Public/stakeholder support. The gains of the project are likely to be sustainable based on stakeholder and public support. There is broad stakeholder support among government and institutional actors for the reforms and changes achieved under this project. In terms of the loss reduction activities, there is also evidence that support for pre-paid meter installations among the public has increased. It is possible that stakeholder support for certain measures such as increasingly aggressive prosecution of illegal connections or the planned rebalancing of tariffs, could encourage an adversarial relationship between the public and GPL and/or the government in the future. This could create challenges for the political sustainability of some of the program elements.
- Policy and regulatory framework. The gains achieved by the project are sustainable from the perspective of the policy and regulatory framework, particularly because many of the activities during the project specifically focused on amending and enhancing the policy and regulatory framework. Given the stakeholder acceptance of these reforms, it is unlikely that any of these policies will be rolled back.
- Special incentives to sustain project benefits. The gains made in the project are unlikely to require special incentives to sustain the project benefits. Several of the gains that have been made in the project could implicate the creation of special policies down the road, such as the creation of regulations supporting energy efficiency or renewable energy deployment, but these are beyond the scope of the project.

b. Potential Risks

Full implementation of project plans and policies. As noted above, a range of new policies, plans and protocols were introduced to and adopted by the Guyana energy sector during the course of the project. During the evaluation, it became apparent that the gains set in motion by the project were continuing to move forward. The evaluation also revealed, however, some gaps or delays in ongoing implementation. Examples include:

- It is not clear that GPL has access to the data, tools, and other technical capacities it requires to conduct useful long-term forecasts.
- GPL is not fully utilizing the capabilities of its new CIS system, and staff comfort with utilizing the fully computerized system could be enhanced.⁵
- The PUC has not yet hired the engineering or economist positions that it originally wrote into its strategic plan because it does not have sufficient office space and because of a lack of present need. As the energy and other utility sectors continue to evolve, however, the PUC may find that it needs to quickly augment its staff, its expertise, and physical space in order to effectively perform its regulatory functions.
- The GPL Board has put many of the new governance protocols on its books into practice. There are some tasks, however, such as the CEO and Board reviews which have not been completed as of the drafting of this document.⁶
- The power sector implementation strategy does not appear to be moving forward as anticipated (e.g. the power sector planning committee that was to be formed in 2010 has not been convened) and institutional ownership of the components of the strategy remains somewhat ambiguous.

In each of these cases, IDB and GOG may wish to revisit the gains of the project in a few months in order to determine if useful follow-on activities to support the key stakeholders achieve “next phase” implementation are appropriate and necessary. For example, it is likely that technical capacity resources to continue support GPL loss monitoring and reduction, as well as long-term forecasting, would be helpful.

Tariff rebalancing. Tariff rebalancing, as currently planned, hinges upon the financial (and political) viability of future tariff adjustments. It is not clear whether tariff adjustments that do not lower residential rates in the future will be politically popular. It is also not clear that Amaila Falls will be completed on the schedule or for the cost originally projected, which could undermine the fundamentals of the current rebalancing proposals.

Increases in oil prices. Future increases in oil prices could put pressure on GPL and make its investments in technical loss reducing activities more difficult. Moreover, oil price increases could also make tariff rebalancing difficult or could also require politically unpopular tariff increases, ratepayer cross-subsidies, or subsidies from the national budget.

c. Institutional Capacity

⁵ GPL staff note, however, that expanded CIS functionality will come with time and does not represent a critical gap in system functionality.

⁶ GPL Board members note, however, that the reviews are currently in process.

By all accounts, the project stakeholders were actively engaged during the course of the project, and the project and its related efforts have contributed directly to the strengthening of the capacity of the affected institutions. These include, among others, training for GPL staff on the new CIS system and capacity building within GPL on tracking and reporting performance metrics; advice and direct consultation to the PUC on the development and execution of a strategic plan; and work with the GPL Board on the implementation of improved corporate governance tools. However, there are several areas of potential concern with regard to project sustainability:

- Permanence of electricity staff function in OPM. To date, OPM energy staff have worked on a project basis, supported by IDB funds. The Hinterland Electrification Unit, which grew out of the UAEP project, was recently created as a formal entity. As noted in earlier reports, however, the electricity policy and project management functions in OPM are not fully or formally institutionalized in law or budgets. It is unclear how and whether OPM would be able to continue to fulfill its targets and responsibilities outlined in the power sector implementation strategy and other documents if specific project funds were not available.
- Unclear and uncertain institutional responsibilities. There are a broad range of new initiatives that have been proposed as part of the power sector implementation strategy. At the same time, the institutional landscape continues to evolve. GEA is playing a more active role in sustainable energy project management, program design, and policy development, and a new Ministry for Environment and Natural Resources was recently created whose mandate in the energy sector remains unclear. There are uncertainties as to which institutions will ultimately have responsibility for implementing the current power sector strategy and it will be important to ensure that pieces of the strategy are not lost along the way if institutional responsibilities shift with time. Moreover, it is unclear whether new responsibilities will require new staffing (and therefore expanded budgets), and whether additional staffing will be feasible in the current budget climate.
- Need for targeted capacity building. GPL's ability to understand, monitor and reduce losses are a central condition for the success of future electricity sector projects. The capacity building provided to GPL during the PSSP program appears to have been useful, but it is likely that direct, ongoing support will be necessary to continue to address loss reductions.

There is no explicit activity currently planned by the IDB to monitor project sustainability. However, the IDB remains actively engaged in the energy sector in Guyana and it is likely that many of the gains achieved during this project will be directly or indirectly monitored as part of parallel efforts and/or follow-on projects.

Sustainability Classification **SU:**

<input type="checkbox"/> Highly Probable (HP)	<input checked="" type="checkbox"/> Probable (P)	<input type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)
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VI. Monitoring and Evaluation

a. **Information on Results**

The processes and mechanisms for data collection and analysis that were used to measure and monitor project results were utilized as intended at the project outset. However, the outputs and milestones utilized to measure progress were not generally supported by quantitative metrics that could be measured over time. Instead, the majority of the project milestones were

based on, for example, the passage of a law rather than the impacts of that law.⁷ The main exception to this was the tracking and monitoring of electricity loss reductions. These were tracked and published in a series of five report prepared by PPA Energy. As noted above, however, GPL did not achieve its loss reduction targets and IDB requested a waiver.

b. Future Monitoring and Ex-Post Evaluation

With regard to future monitoring, IDB is not planning to track potential future impacts from this operation. IDB's due diligence of the Amaila Falls hydropower project will revisit many issues related to the energy sector, but will not consider the regulatory and institutional framework.

With regard to evaluation, Section 4.03 of Chapter IV in the Special Conditions of the Loan Agreement stipulates the need for an Ex-post Evaluation to be carried out by IDB. IDB hired the following consultant to conduct the Ex-post Evaluation:

Mr. Wilson Rickerson
+1 617 930 5502
wilson.rickerson@mc-group.com

The costs for this consultancy were financed by IDB using C&D resources (ATN/OC-12750-GY). The evaluation was completed on May 30th, 2012.

VII. Lessons Learned

This section summarizes lessons learned from the project as well as recommendations for potential next steps. An initial draft of these lessons learned was developed following a review of all project documents and interviews with the relevant stakeholders in Guyana. The findings of this initial draft were then presented during an Exit Workshop on April 26th, 2012 during which feedback and comments were solicited from the key stakeholder organizations. The table below was refined, amended and expanded based on the feedback from this discussion. The minutes of the facilitated workshop are contained in Annex 4.

Lessons Learned	Recommendations
Project achievements are well grounded in existing institutions and follow-on activities should focus on monitoring and reinforcing Guyana's accomplishments.	Conduct periodic reviews and assessments related to the institutional changes that were made in order to monitor and evaluate progress and sustainability

⁷ Although outcomes are listed in the Progress Monitoring Report (PMR) documents, a means of verification for the outcomes was not established at the beginning of the project and these outcomes do not appear to have been tracked. For example, project documents imply that an intended outcome of the project was that customer awareness would increase by 20% as a result of outreach programs. However, a baseline against which a 20% improvement could be measured was not established

- The underlying challenge of losses was not solved by the PSSP
- Using aggregate losses as a metric for loss reductions is not an appropriate as the sole metric for loss reduction activities since it does not differentiate between technical and non-technical losses
- Losses will require a broad range of different initiatives sustained over a number of years to resolve
- Loss reduction requires technical as well as non-technical responses
- Current loss reduction activities should continue and new approaches to both technical and non-technical losses should be pursued
- Support better understanding of technical and non-technical losses in order to more precisely target interventions
- Utilize level of effort as a metric for non-technical loss reduction (e.g. # of meters replaced) instead of aggregate loss reduction targets
- Reach out to other regional utilities and initiatives (e.g. CARICOM DSM/EE platforms and CARELEC) to promote knowledge transfer related to loss reductions. In late 2011, for example, a loss reduction workshop with the Dominican Republic's CDEEE was held in Georgetown, attended by utility technicians and management. International experience and best practices beyond the Caribbean could also be drawn upon.

Staff turnover is a significant barrier to institutional progress within the sector

- Develop a set of best practices and strategies related to staff retention in the energy sector that can be shared regionally
- Conduct appropriate and targeted technical capacity building and training related to emerging energy challenges and opportunities for current officials, as well as for rising young leaders

Significant progress was made regarding legal ability to pursue non-technical losses but judicial bottlenecks are a key barrier

Review of the judicial system to determine whether additional training and capacity building of judicial personnel or the creation of special courts might relieve congestion

- GPL does not have the tools and technical capability to conduct long-term planning
- GPL is not utilizing CIS to its fullest capabilities
- GPL lacks experience in integrating (or planning for the integration of) intermittent renewable energy generation
- GPL requires assistance evaluating its current staff expertise and gaps and how well positioned it is as an organization to deal with upcoming investments in T&D infrastructure, hydropower, etc.
- Support a program of technical capacity building for GPL related to maximizing use of CIS capabilities and conducting long-term planning
- Conduct a review of GPL staffing and expertise to determine the ability of the utility to manage planned investments, as well as react to trends in alternative energy markets (e.g. the availability of cost-competitive, grid-connected PV being deployed rapidly during the next 5-7 years) as a lens to inform planning.

PUC has not yet needed to follow plan to increase staff at headquarters, but the situation could change as other sectors evolve

Revisit PUC strategic plan and staffing periodically in order to assess additional capacity needs

- There is a lot riding on Amaila (attracting self-generators, tariff rebalancing, price stabilization, etc.) but there is currently no back-up plan.
 - Power sector implementation planning has put a lot of salient issues “on the table,” but there is a lack of institutional clarity and concrete implementation strategies for the current power sector implementation strategy
- Energy efficiency outreach is not linked to current energy efficiency incentives or policies and there is no integration of energy efficiency into power sector planning
- Implement a comprehensive plan to support the Amaila hydropower plant
 - Develop back-up plans and contingency scenarios in case Amaila is not build on schedule, on budget, or at all
 - Acknowledge the cost implications of back-up plans, since such plans are unhelpful if they cannot realistically be financed and implemented.
 - In the meantime, alternative scenario planning for Amaila could be conducted in order to enable more complete risk assessment and the identification of potential mitigation pathways.
 - Clarify institutional responsibilities and establish clear procedures for moving forward with (and monitoring) the power sector policy implementation strategy
 - Convene the multi-agency planning committee outlined in the official power sector implementation strategy in order to conduct collaborative planning and forecasting exercises.
 - Clarify the role of GEA with respect to the broad range of emerging energy issues (e.g. renewable, efficiency, losses, power sector policy planning, etc.).
 - The development of a national energy policy and strategy which takes both current and alternative development scenarios into account and anticipates potentially disruptive events (e.g. delays in Amaila, cost-breakthroughs in grid-connected PV, and/or an aggressive commitment to energy efficiency).
 - Develop a strong and clear policy position with regard to energy efficiency, including targets and an examination of the potential for integrated resource planning (IRP).
 - Identify sources of funding for incentives (or strategies for incentive-free financing) that avoid additional burdens on rate-payers or taxpayers
 - Explore cogeneration opportunities beyond the Skeldon plant as an option to add incremental, high-efficiency generators to the grid both in advance of Amaila (to meet near-term capacity needs) and afterwards once demand begins to catch up with hydropower supply.
 - Support the development of financing mechanisms for both energy efficiency and renewable energy that leverages the high costs of electricity to enable attractive paybacks (e.g. performance contracting and an expansion of IPP generators).

There are no effective renewable incentives or policies in place, no integration of RE into formal planning beyond Amaila, and little visibility with regard to the implications that potentially disruptive market trends related to non-hydro renewables could have for energy planning in Guyana.

- Conduct a review of the legal and regulatory framework (e.g. the Hydropower Act) to determine the extent to which base-load and intermittent renewable energy sources are adequately regulated (and anticipated) under current rules
- Guyana should begin to think through new policy structures such as net metering, feed-in tariffs, and protocols to effectively integrate distributed generation into the grid. GEA and GPL have launched a pilot PV net metering project in order to gain a better understanding of how such policies intersect with current grid management protocols and utility planning.
- Develop roadmaps for win-win situations under which new intermittent renewables could be installed to provide utility benefits (e.g. peak shaving) while maximizing the capability of current and planned resources (e.g. oil-fired generators and hydropower) to balance intermittent generation
- Monitoring of current grid-connected PV project in order to determine the opportunities and constraints that additional grid-connected systems would present, and the exploration of appropriate net metering legislation for Guyana.
- The development of a roadmap and decision-making tools for Guyana policymakers to chart out renewable energy investment strategies and develop processes for evaluating emerging energy opportunities.

Annexes:

1. [Minutes from the Exit Workshop](#)
2. [Borrower's Evaluation](#)
3. [Exit Workshop presentation](#)

Other Documents

1. [Original Policy Matrix](#)
2. [Results Matrix](#)
3. Tranche Release Memoranda
 - i. [Tranche 1](#)
 - ii. [Tranche 2](#)
 - iii. [Tranche 3](#)
4. [Final Evaluation Report of the project](#)
5. [Photos from the Exit Workshop](#)