



Namibia IPP and Investment Framework Technical Assistance – Final Report

For the Electricity Control Board, Windhoek,
Namibia

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EXECUTIVE SUMMARY

The U.S. Trade and Development Agency (USTDA) provided a grant to the Electricity Control Board (ECB), Namibia as a follow-up to a previous grant in 2006 that focused on developing various framework models for planning for an IPP regime in Namibia. The first USTDA grant supported the following key activities:

- Identification of barriers to IPP development in Namibia
- Market Model Recommendations
- Regulatory Recommendations
- Model document preparation for small and medium IPPs
- Policy Recommendations
- Barrier Mitigation

Since the completion of the first USTDA grant, Namibia has been forced to take concrete steps to address its power supply future. Key challenges facing the country include (i) the reduction in surplus electricity supply from South Africa; (ii) soaring prices for liquid and gas fuels; (iii) continuing increases in demand for mining products, and with that the electricity to process minerals; (iv) the long lead times involved in building new power plants; and (v) the desire to develop a secure power supply independently of South Africa.

Consequently, Namibia, through the ECB and NamPower, has taken several concrete steps to begin tackling the electricity supply-side challenges facing the country. These steps include the following key ones:

- Construction of the Caprivi Link with Zambia
- Investment in rehabilitation of coal-fired station in Zimbabwe
- Encouragement of new IPP generators in Namibia

In the interim and prior to the current grant, ECB began receiving a number of IPP applications for licenses. The current project under the USTDA grant is a follow-up Technical Assistance (TA) termed as Phase II Technical Assistance, which focuses on the provision of consulting services to ECB in the evaluation of IPP license applications. ECB selected CORE International, Inc., an international management consulting company based in Washington, D.C., to continue to provide technical advisory services in order for ECB to evaluate the various IPP applications in accordance with both the Government's policy and best international practices to ensure that the review process is transparent, fair, and accountable.

Objectives of the Phase II Technical Assistance

The objective of the Phase II USTDA Grant was to provide comprehensive advisory services to the ECB in the due diligence of IPP project applications and provide capacity building to ECB managers and staff in a host of technical areas involving the implementation of a successful IPP industry in Namibia. The Phase II support was provided through the completion of the following tasks as described in the Terms of Reference:

1. *Task 1: Advisory Support for ECB Review and Due Diligence of Current and Potential IPP Projects*

2. *Task 2: Development of IPP Framework Implementation Instruments and Capacity Building of the ECB for IPP Implementation*
3. *Task 3: Technical Assistance to the Grantee in the Development of an Integrated Resource Plan (IRP) and the Distribution Grid Code*
4. *Task 4: Development of Methodology for Economic and Financial Analysis of IPP Projects*
5. *Task 5: Development of Guidelines for Environmental Analysis of IPP Projects*
6. *Task 6: Analysis of Development Impacts*
7. *Task 7: Implementation Plan for the IPPs*
8. *Task 8: Final Report*

CORE International, Inc. carried out the activities under all of the eight tasks and submitted individual reports for Task 1, Task 2, Task 3, Task 4, and Task 7. A combined report was submitted for the work conducted under Task 5 and Task 6. All of these reports were in accordance with the Terms of Reference and the milestone deliverables required under CORE International's contract with the ECB. This report is CORE's Task 8: Final Report in complete fulfillment of all requirements of the contract.

The individual milestone reports submitted to the ECB and approved by ECB are enclosed as Annex 1 through 6. Also, as required by USTDA, Annex 7 includes a list of potential suppliers of goods and services in the U.S. directly relevant to this project.

Capacity Building of ECB

In addition to providing due diligence support to the ECB a major component of the assistance was to provide capacity building support to ECB in a number of areas. During the course of the project, CORE conducted numerous work sessions on a variety of topics including (i) risk identification and mitigation, (ii) economic and financial analysis of IPP projects, (iii) IPP review process and record keeping, (iv) IPP negotiations, and related subjects.

In addition, as required under Task 2 and Task 4, CORE also conducted two comprehensive two-day workshops for officials from the ECB and other stakeholders in the IPP industry. Materials developed and used for these workshops are included in the Task 2 Report submitted as Annex 2 to this report.

Recommendations

While recommendations for individual tasks are included in the milestone report (see annexes to this report), the following are CORE's overall recommendations for ECB to continue the process of IPP implementation:

1. Based on the IPP Process Document developed by CORE under a parallel contract with ECB, it is recommended that ECB should review the applications requirements posted on its web site and make any necessary revisions on a regular basis.

2. In addition, templates for all aspects of the IPP application review and decision-making should be posted on the ECB web site in order to enhance transparency of the review process.
3. The procedure for public review and comment should be revised to provide public prompt access to any IPP applications and this procedure, when finalized, should also be posted on the ECB web site.
4. ECB and NamPower should formalize the process of establishing the proposed ECB-NamPower IPP Working Group. This Group should be charged with a specific mandate in the IPP implementation process in accordance with the Terms of Reference developed by CORE and included in this report.
5. ECB and NamPower should aim to reach agreements on standard formats, procedures, and roles in the following areas:
 - Risk Identification and Risk Allocation Principles and Approaches
 - A Standardized Tender Document for Small Scale IPPs
 - A Standardized PPA Process and a Generic PPA for Large Projects
 - A Standardized PPA for Small Scale IPPs
6. Namibia currently does not have an NIRP. As part of Task 3 under this project, the CORE Team developed and submitted detailed Terms of Reference to the ECB for an NIRP. CORE also recommended that the NIRP should be developed by an independent party and not by utilities or any potential participants in the power market.
7. The Government of Namibia needs to adopt a formal power market model, as the market participants and IPP developers must understand the Government's policy with respect to the market model in order for them to submit proposals consistent with the market rules. In addition, as Namibia is a trader in the Southern African Power Pool, an established market model will be help strengthen Namibia's role as a power trading partner in the region.

In addition to these two major activities, it is also recommended that the ECB and NamPower formalize a Working Group along the lines of the Terms of Reference developed by CORE and discussed with both parties.

Also, while the ECB has instituted a public consultation process on IPP applications, it may be useful to formalize this process further. One of the best examples of the process for stakeholder participation in the IPP process widely used by many countries was developed by the California Energy Commission (CEC) to guide its IPP industry for past two decades. Annex IV of the Task 7 Report includes a document that could be very useful to the ECB as it formalizes its stakeholder participation process in the development and licensing of IPP projects.

1 INTRODUCTION AND OBJECTIVES

This section provides a brief introduction to the challenges being faced by the Electricity Control Board (ECB), the background to the grant provided by the U.S. Trade and Development Agency (USTDA), and the overall objectives of the Grant and the Technical Assistance.

1.1 Introduction

In November 2007, the Government of Namibia passed Electricity Act 2007, which permits and encourages private sector investment in the country's power sector. The Electricity Control Board (ECB), the regulator in Namibia has been given the responsibility under the Act to implement the Independent Power Producer (IPP) regime in Namibia in accordance with the provisions of the Act and its own regulatory procedures approved by the ECB Board. Accordingly, ECB developed and posted a vast amount of information on its web site that would be of interest to prospective IPPs interested in Namibia's power sector.

In addition, ECB has developed a detailed procedure for the documentation and evaluation of the IPP applications. This procedure is currently being refined based on the experience ECB has had as a result of a number of application it has received for licenses for generation of power.

The U.S. Trade and Development Agency (USTDA) has provided a grant to the ECB as a follow-up to a previous grant in 2006 that focused on developing various framework models for planning for an IPP regime in Namibia. The first USTDA grant supported the following key activities:

- Identification of barriers to IPP development in Namibia
- Market Model Recommendations
- Regulatory Recommendations
- Model document preparation for small and medium IPPs
- Policy Recommendations
- Barrier Mitigation

Since the completion of the first USTDA grant, Namibia has been forced to take concrete steps to address its power supply future. Key challenges facing the country include (i) the reduction in surplus electricity supply from South Africa; (ii) soaring prices for liquid and gas fuels; (iii) continuing increases in demand for mining products, and with that the electricity to process minerals; (iv) the long lead times involved in building new power plants; and (v) the desire to develop a secure power supply independently of South Africa.

Consequently, Namibia, through the ECB and NamPower, has taken several concrete steps to begin tackling the electricity supply-side challenges facing the country. These steps include the following key ones:

- Construction of the Caprivi Link with Zambia
- Investment in rehabilitation of coal-fired station in Zimbabwe
- Encouragement of new IPP generators in Namibia

In the interim and prior to the current grant, ECB began receiving a number of IPP applications for licenses. The current project under the USTDA grant is a follow-up Technical Assistance (TA) termed as Phase II Technical Assistance, which focuses on the provision of consulting services to ECB in the evaluation of IPP license applications. ECB selected CORE International, Inc., an international management consulting company based in Washington, D.C., to continue to provide technical advisory services in order for ECB to evaluate the various IPP applications in accordance with both the Government's policy and best international practices to ensure that the review process is transparent, fair, and accountable.

1.2 Objectives

While this Phase II TA project was under way, the only power project under active consideration was the Kudu gas-to-power project in the southern part of the country. Other steps taken to try to address supply-side issues in the power sector included the restructuring of the domestic market to unbundle NamPower's generation, transmission and trading activities.

Since the completion of the earlier project, Namibia has been forced to take concrete steps to address its power supply future. Key challenges facing the country include (i) the reduction in surplus electricity supply from South Africa; (ii) soaring prices for liquid and gas fuels; (iii) continuing increases in demand for mining products, and with that the electricity to process minerals; (iv) the long lead times involved in building new power plants; and (v) the desire to develop a secure power supply independently of South Africa.

Mindful of the rapid pace of change in the regional power picture, the USTDA decided to further support the ECB in its efforts to provide for a transparent, fair and efficient system to incorporate IPPs into the country's electric power system. To that end, the current project features the following broad objectives:

1. Further assistance to ECB on sector planning, market model development, licensing issues, project documentation
2. Coordinate with NamPower and MME on specific issues - e.g., IRP
3. Staff development at ECB to address increasingly complex power sector issues

These objectives are elaborated in the Terms of Reference (TORs) for this Technical Assistance. Exhibit 1-1 includes the full Terms of Reference for the Technical Assistance as included in the Grant Agreement signed by the ECB and USTDA.

EXHIBIT 1-1: TERMS OF REFERENCE AS INCLUDED IN THE GRANT AGREEMENT

INDEPENDENT POWER PRODUCER (IPP) AND INVESTMENT MARKET FRAMEWORK TECHNICAL ASSISTANCE PHASE II

The proposed Technical Assistance shall be provided through a number of tasks. A description of all tasks, subtasks, and deliverables as provided below:

Task 1: Advisory Support for ECB Review and Due Diligence of Current and Potential IPP Projects

Under the USTDA-funded Independent Power Producer and Investment Market Framework Technical Assistance (the “Phase I TA”), the Contractor trained the Grantee in best international practices for conducting due diligence on IPP proposals. Under this Task 1, the Contractor shall conduct a due diligence review including a review, with the Grantee and its staff, of the licensing process of various IPP projects that are at different stages of development. The Contractor shall carry out the following specific subtasks:

Subtask 1.1: Review and Analyze the IPP Licenses and/or Conditional Licenses Already Issued by the Grantee

With respect to the conditional licenses already issued by the Grantee, the Contractor shall:

- Review the licenses and document the conditions included in the licenses, including the basis for these conditions.
- Evaluate the conditions for licensing, using the proposed IPP projects as case studies, and evaluate the impact of such conditions on the viability of the proposed IPP projects in terms of implementation, including a comparison with international best practices and the Contractor’s expertise in previous similar IPP projects elsewhere in the world.
- Advise the Grantee of any issues there may be pertaining to the conditions that have been issued.

Subtask 1.2: Provide Expert Due Diligence for the Issuance of Licenses for Additional IPP Projects

Several developers have approached the Grantee with the desire to submit IPP proposals of different-sized plants. Many of these IPPs are at the discussion stage with the Grantee. In addition, the Grantee has received expressions of interest from a number of small developers for smaller IPP projects involving wind, biodiesel, and invader bush as primary energy sources. Currently, these small IPPs that may be viable in specific locations around the country have a cumulative capacity of approximately 90 MW. With respect to all potential new projects, the Contractor’s support shall include the following:

- For large and medium size IPPs, the Contractor shall provide expert due diligence services to the Grantee, including advising the Grantee on how to evaluate and revise IPP license applications.
- For the smaller IPP projects, many of which are also being prepared by the Planning Division at the Ministry of Mines and Energy, the Contractor shall:
 - Develop a standardized tender document and model license for small IPPs and provide expertise on how to advertise the tender. Such support will be based on both local conditions in Namibia, as well as international best practices for small-scale IPPs and lessons learned from successful case studies in other countries;
 - Provide technical support and expert advice to the Grantee in developing tender evaluation criteria and how to conduct tender evaluation/negotiations;

- Provide technical support and expert advice to the Grantee in customizing a Small-scale Power Purchase Agreement (SPPA) and embedding it in a standard license; and
- Provide advisory support for other IPP implementation issues and procedures.

Subtask 1.3: Document All Analysis and Results of Review

Under Subtask 1.3, the Contractor shall document the results of its review of the licensing process using, for illustrative purposes, each IPP project/opportunity reviewed by the Contractor. The Contractor shall prepare model documentation for use by the Grantee to organize potential IPP projects. This documentation will include a format for incorporating project information such as:

- *Project Sponsor Details* -- Name and contact details of the IPP developer;
- *Technical Project Details* – size, location, and primary energy source, key project characteristics, buyer of electricity, and overall project costs; and
- *Project Financial Details* – total financing, sources of financing, amount and size of hardware, software, and construction services to be procured internationally, etc.

The Contractor shall specify any modifications needed to the model framework documents developed under the Phase I TA, and shall include any information relevant to accelerating the implementation of IPP projects in Namibia.

Task 1: Deliverables:

The Contractor shall prepare and submit an Interim Report that shall document all details of the work completed and recommendations made for enhancing the Grantee's licensing process.

In addition, the Contractor shall deliver the following stand-alone documents to the Grantee for use in any IPP projects:

1. Model Tender Document;
2. Model Small-scale Power Purchase Agreement (SPPA);
3. Negotiation Guidelines; and
4. Model Organization Documentation.

Task 2: Development of IPP Framework Implementation Instruments and Capacity Building of the ECB for IPP Implementation

Under the Phase I TA, the Contractor developed frameworks for three different types of IPPs – large (over 100 MW), medium (10 - 100 MW), and small (1 – 10 MW). The first objective of Task 2 is to develop implementation instruments for large and medium IPPs. The second objective of Task 2 is for the Contractor to provide capacity building and skills development support to the Grantee. Task 2 shall be accomplished by the following:

Subtask 2.1: Develop IPP Framework Implementation Instruments for Large and Medium Sized IPP Projects

Subtask 2.1.1: Large IPP Projects

The Grantee intends that large IPPs will be licensed on a negotiated basis rather than through the issuance of tenders that are more suitable for smaller IPPs. Therefore, the Contractor shall develop a detailed plan of the process for a review of large IPPs including the process for review of power purchase agreements (PPAs). Specifically, the detailed plan shall include the following items:

- *Consistent with Namibian Law, the development of approaches and methods for greater Grantee involvement in and oversight of NamPower capacity planning to the degree that it impacts the Grantee's deliberations on IPP applications;*
- *A model for a consultative process between the Grantee and NamPower for the commissioning of IPPs, keeping in mind the independence of the two bodies, as a regulator and a utility, respectively;*
- *Consistent with Namibian Law, the development of approaches to increasing investor confidence in the fairness of NamPower dispatch results;*
- *Tools for the evaluation of the PPA and price adjustment clauses and methodology for avoiding misalignment of prices paid to IPPs and prices paid by the consumers;*
- *General principles of negotiation related to the development of IPP projects, including contract documents and methodology for ensuring regulatory compliance by licensees; and*
- *Other areas as they may appear during the technical assistance.*

Subtask 2.1.2: Medium IPP Projects (10 – 100 MW)

In the case of Medium IPP projects, the Contractor shall:

- *Develop strategies for reduced transactional costs for Medium IPPs through a Grantee program to provide standard contract forms. The Contractor shall assist the Grantee with the standardization of the key agreements developed under the Phase I TA, such as fuel supply agreements, power purchase agreements, and operational contracts, for these Medium IPPs. The Contractor shall provide advisory assistance to the Grantee on how to apply such standard contract forms to any IPP projects currently under consideration by the Grantee; and*
- *Provide assistance on the development of a process manual for conducting the due diligence of medium-sized IPPs including key elements of reviewing the PPAs and project risks.*

Subtask 2.2: Provide Capacity Building and Skills Development Support to the ECB

The electric power market, the power sector restructuring, and the regional power profile are all changing rapidly in Namibia. The Grantee needs to keep pace with these changes and ensure that rational decisions are made that are in the best interest of the Namibian economy while expanding the opportunities for private power generators. Accordingly, managers and staff from the Grantee, the Ministry of Mines and Energy, and other stakeholders require skills development in a number of areas.

The Contractor shall make every effort to work collaboratively with the Grantee and other stakeholders with the goal of providing “hands on” technical assistance and training in the areas covered under this TA, including ad hoc workshops and working sessions that shall be conducted throughout the TA each time the Contractor visits Namibia. In addition to this ad hoc training, this task is dedicated specifically to capacity building of the Grantee in a number of key areas in order to prepare the

Grantee to implement a transparent and accountable process for issuing IPP licenses and enforcing compliance with licensing conditions in accordance with international best practices. Specifically, the Contractor shall design and implement a comprehensive program aimed at strengthening the capacity of the Grantee and enhancing the skill sets of the Grantee management and staff. The following are immediate priority training areas for capacity building that have been identified by the Grantee:

- Training in negotiation of large IPPs;
- Tender preparation and standard PPAs and licenses;
- Methodology for granting licenses to small IPPs;
- Best practices in arbitration and dispute settlement;
- Determination of cost of service and tariff review approaches;
- Grid code examples and regulatory procedures;
- Process for putting small IPPs on a price-taking payment schedule that is keyed to the NamPower or RED (Regional Electricity Distributors) wholesale electricity price;
- Regulatory governance as it impacts customer preparation and development of investor confidence to promote IPPs;
- Communications, outreach, public participation, and building consumer acceptance; and
- Power sector market competition and trade capacity building.

The Contractor shall consult with the Grantee and prioritize these areas for training and capacity building. The Contractor shall provide two 3-4 day comprehensive courses, covering at least five topics each, to the Grantee staff and managers. These events also shall be open to senior staff from NamPower and the Ministry of Mines and Energy.

Task 2: Deliverables:

Task 2 shall include two distinct deliverables. The first deliverable will be an Interim Report including documentation of all of the activities conducted under Subtask 2.1 including the detailed plan, discussed in subtask 2.1.1, and all contract forms and the process manual, described in subtask 2.1.2.

The second deliverable will be related to the two courses and shall include the following:

1. Course Plans and Course Books for Training Courses; and
2. A CD of Reference Documents related to International Best Practices in IPP Industry Development and the Role of the Regulator.

Task 3: Technical Assistance to the Grantee in the Development of an Integrated Resource Plan (IRP) and the Distribution Grid Code

The objective of Task 3 is to provide technical assistance to the Grantee in two areas: (i) development of an Integrated Resource Plan (IRP) and (ii) development of a Distribution Grid Code. The Contractor's role shall be to provide expert technical assistance for the development of these two documents including work sessions, detailed outlines, and guidance on the type and frequency of data needs. The Grantee shall be responsible for the development and final production of these two documents.

Subtask 3.1: Provide Technical Assistance for the Integrated Resource Plan

In order to ensure that (i) IPPs are brought on line at a schedule that is consistent with national energy planning; (ii) resources are utilized optimally; and (iii) the generation mix in Namibia is diversified to reduce the current excessive dependence on hydro and imports, the Grantee shall mobilize key Namibian entities such as the Ministry of Mines and Energy (MME) and NamPower to undertake the development of an Integrated Resource Plan (IRP). The Contractor shall, consistent with Namibian Law, support the Grantee in designing an action plan for the development of the IRP by a combined team of the Grantee, MME, and NamPower, under the Grantee's regulatory oversight. The Contractor shall conduct a two to three day training session to train key personnel in the development of the IRP. The actual IRP will be drafted and financed by the Namibian Government independent of this TA.

Subtask 3.2: Technical Assistance for the Development of a Distribution Grid Code:

Under this Subtask 3.2, consistent with Namibian Law, the Contractor shall prepare a draft distribution grid code that will specify standards under which small IPPs will be required to connect to the REDs' distribution network.

Under this subtask, the Contractor shall:

- *Develop a detailed Model Template for a Distribution Grid Code;*
- *Benchmark the Distribution Grid Code with International Distribution Utilities.*

Task 3: Deliverables:

As part of this task, the Contractor shall deliver the following documents:

- *An Action Plan for the Development of an Integrated Resource Plan (IRP) for Namibia;*
- *A draft Distribution Grid Code model template ;*
- *Course plans and course books for the IRP training; and*
- *A CD of reference documents related to the IRP training.*

Task 4: Development of Methodology for Economic and Financial Analysis of IPP Projects

Typically, it is the IPP developer that conducts the economic and financial analysis as part of its application for license. However, it is the responsibility of the Grantee to perform due diligence on the project analysis submitted by the IPP. Accordingly, the Contractor shall develop a standardized methodology to be required of all IPP developers for the provision of an economic and financial analysis of the proposed project. The IPPs will be required to justify the proposed IPP both on the basis of national economic impacts and the financial viability of the project. Specifically, the methodology shall include the standard approach for calculating the economic and financial internal rates of return (IRR) of the proposed IPP projects. The Contractor shall also develop guidelines for Grantee review and due diligence of economic and financial analyses submitted by IPPs.

Task 4 Deliverables:

As part of Task 4, the Contractor shall prepare and deliver to the ECB the following deliverables:

- *Standard Guidelines for IPPs for conducting and presenting Economic and Financial Analyses of proposed IPP Projects; and*

- *Standard Guidelines for Grantee review of Economic and Financial Analyses of proposed IPP Projects.*

Task 5: Development of Guidelines for Environmental Analysis of IPP Projects

Namibian environmental laws and standards are consistent with international standards, and all projects, whether publicly financed or privately developed and financed, require the project sponsors/owners to conduct an environmental impact assessment. These environmental impact assessments will also be required of all IPPs, whether negotiated or invited through a tender. The Contractor shall review the environmental standards applicable in Namibia and those of potential lending agencies, and provide advisory support to the ECB on the standard language to be included in all IPP proposal requirements with respect to environmental impact assessment of the proposed power project.

Task 5: Deliverables:

The Contractor shall provide a detailed description of the type of environmental impact assessments that will be required of all IPPs as part of the condition for license. In addition, the Contractor shall provide standard guidelines for IPPs for conducting environmental impact assessments.

Task 6: Analysis of Development Impacts

Subtask 6.1: Analysis of Development Impacts on Namibia

The Contractor shall report on the potential Development Impact of the project in Namibia. The Contractor shall focus on what the economic development outcomes will be if the project is implemented according to the recommendations of the technical assistance. While specific focus should be placed on the immediate impact of the project, the Contractor shall include, where appropriate, any additional development benefits to the project, including spin-off and demonstration effects. The analysis shall also include a description of any negative impacts. The analysis of the Contractor shall be as concrete and detailed as possible. The Contractor shall provide estimates of the project's potential benefits in the following areas:

Infrastructure: *A statement on the infrastructure impact giving a brief synopsis. This shall include additions and improvements to electric power generation and transmission systems; roads and other transportation systems, water systems, housing, etc.*

Market-Oriented Reform: *A description of any regulation, laws, or institutional changes that are recommended and the effect they would have if implemented.*

Human Capacity Building: *The number and type of positions that would be needed by the Grantee to implement the recommendations, and more broadly, by the electric power industry, as well as the number of people who will receive training and a brief description of the training program. This also shall include identifying improvements in skill sets and in the knowledge base.*

Technology Transfer and Productivity Enhancement: *A description of any advanced technologies that will be implemented as a result of the project, and a description of any efficiency that will be gained.*

Other: Any other development benefits to the project.

Subtask 6.2: Development Impact of IPP Projects

The Contractor shall identify the potential developmental impacts of a range of IPP projects, using as examples, some representative IPP projects currently being contemplated in Namibia. In consultation with the Grantee, the Contractor shall develop a list of development impact requirements that shall be included in all tenders for IPPs as well as required of all unsolicited IPP proposals.

Task 6: Deliverables:

In addition to the report on the potential development impact of the project in Namibia, the Contractor shall provide a set of development impact guidelines to be included as part of any IPP proposals or tenders for all IPP projects.

Task 7: Implementation Plan for the IPPs

The Contractor shall draft a Model IPP Project Implementation Plan that the Grantee will include in all tender documents for IPP projects. It also will be used by the Grantee as a fact sheet for all unsolicited IPP proposals.

This Model IPP Project Implementation Plan shall include the following:

- Project Financing Details – the type and timing of financing that will be available for project construction and start-up;
- Formalized Agreement for Fuel Supply – including prices and terms and conditions for fuel delivery;
- Project Implementation Schedule – a timeline and a completion date for the project, and
- Institutional Agreements – including a model PPA with the buyer of electricity.

The Contractor shall prepare the Model Implementation Plan in close coordination with the Grantee. The Grantee shall review this plan to better ascertain the level of detail required in future Implementation Plans.

Task 7 Deliverables:

The Contractor shall prepare and submit the following deliverable under Task 7:

- Model IPP Project Implementation Plan

Task 8: Final Report

Under this task, the Contractor shall submit a Draft Final Report to the Grantee. The Grantee shall review the Draft Final Report and provide comments to the Contractor within two weeks from receipt of the draft report. Within two weeks after receiving comments on the Draft Final Report, the Contractor shall finalize and submit the Final Report. The Final Report shall include all documents, analysis reports, course/workshop books, and any other intermediate deliverables developed during the conduct of the technical assistance.

The Contractor shall ensure that the Final Report is submitted in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall be a substantive and comprehensive report of work performed to carry out all of the tasks set forth in the Terms of Reference and shall include, among other things, an Executive

Summary and all deliverables. Each task of the Terms of Reference shall form a separate chapter of the Final Report.

The Final Report shall also include a comprehensive list of suppliers, including potential sources of U.S. equipment and services, relevant to the implementation of each component of the Project as outlined in the Study.

The Contractor shall submit the Final Report in English. The Contractor shall provide five (5) hard copies and one (1) electronic version of both the confidential and public versions of the Final Report to the Grantee and shall provide copies to USTDA in accordance with Clause I of Annex II of the Grant Agreement.

Task 8 Deliverable:

The deliverable for this task shall be a comprehensive Final Report documenting all activities and intermediate deliverables as well as all technical materials as appropriate appendices. The Final Report shall be provided in the format specification and number of copies as specified in the USTDA Grant Agreement and in the contract between the Grantee and Contractor.

Notes:

- (1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.**
 - (2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.**
 - (3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**
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2 TASK 1: ADVISORY SUPPORT FOR ECB REVIEW AND DUE DILIGENCE OF CURRENT AND POTENTIAL IPP PROJECTS

This section provides a summary of Task 1 objectives, activities conducted under Task 1, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Task 1 Final Report to the ECB, which was accepted by the ECB.

A copy of the Task 1 Final Report submitted to the ECB is enclosed as Annex 1 to this Report.

2.1 Objectives of Task 1

The objectives of Task 1 were for CORE to conduct a due diligence review of all IPP licenses already issued as well as all new application for license. In addition, the objective was to develop all the templates and documents to record the review process and results. Detailed activities completed under Task 1 are included in the Terms of Reference for the Technical Assistance provided in Exhibit 1-1.

2.2 Summary of Activities

At the beginning of this task, ECB provided CORE International both electronic and hard copies of all the IPP applications. In addition, ECB and CORE held discussions on a detailed procedure for the documentation, organization, and review of the applications. Based on the TORs, it was agreed that the role of CORE International in the IPP application due diligence process will be restricted to (i) acting as an independent technical reviewer of the contents of the IPP license applications and (ii) providing ECB with technical and non-binding recommendations for ECB's consideration. It was also clearly established that due diligence, deliberations, and final decisions were reserved onto ECB and not CORE or its experts.

2.2.1 Subtask 1.1: Review and Analyze the IPP Licenses and/or Conditional Licenses Already Issued by the Grantee

Subtask 1.1 focused on the following specific activities:

- Review the of the license applications and documentation of general, technical, and financial information provided by the applicants
- Review of the conditional licenses already issued by the Minister and the analysis of the conditions including the basis used by the ECB for developing the conditions
- Advise to the ECB on the impact of the conditions associated with the conditional

CORE experts worked with ECB managers and staff in ensuring that the process for establishing IPP evaluation criteria was (i) fair and in the best interest of Namibia's power sector and economic development strategy and (ii) fair to the IPP applicants. A principal goal in this process was to strike a balance between the best interest of the country and the desire of the Government to continue to encourage the IPP industry to participate in Namibia's power sector.

As part of this subtask, the CORE Team also worked with ECB managers and staff on further refining the entire process of IPP applications documentation and review.

2.2.2 Subtask 1.2: Provide Expert Due Diligence for the Issuance of Licenses for Additional IPP Projects

With respect to all potential new projects that were still under evaluation or were proposed after this project started, the CORE Team provided expert technical review of the applications submitted by the IPP applicants. CORE's approach to conducting the technical reviews and advising the ECB was based on the different types of IPPs and the model framework documents developed during the Phase I technical assistance. Specifically, the activities conducted by CORE included the following:

- For large and medium size IPPs, CORE's review and advisory services included the evaluation of the applications and making specific recommendation on ways to revise the applications in the areas of deficiencies. These recommendations were provided to ECB for specific large and medium-sized IPPs.
- For the smaller IPP projects, CORE's review and advisory services were based on the Model Tender that was prepared under the previous study. Specifically, the CORE Team's review of smaller IPPs included advice to ECB on the development of a standardized tender document and model license. The initial applications were received based an announcement by the ECB that included a Model License Application. CORE provided recommendations to the ECB on further refining the contents of the Licensing Application. Considering the evolutionary nature of this process, the next generation of Licensing Application will include additional requirements based on the experience thus far.

In addition, CORE's experts provided technical support and expert advise to ECB in developing tender evaluation criteria and on conducting tender evaluation/negotiation. The next step in this process was to revise the Small-scale Power Purchase Agreement (SPPA) developed during the previous study and embedding it in a standard license. This is an important step and has been included as a condition in the conditional licenses awarded by the Minister of Mines and Energy (MME) based on the recommendations of the ECB Board.

The next area of advisory support to ECB included further elaboration and expansion of the IPP implementation issues and procedures.

2.2.3 Subtask 1.3: Document All Analysis and Results of Review

Under Subtask 1.3, CORE began the review of the IPP applications and noticed that despite a common format provided by ECB in the License Application posted on ECB's web site, the style and contents of the individual applications submitted by various IPP developers varied widely. ECB had already begun the process of documenting the contents of the applications and had developed a format for documentation.

CORE's experts and ECB officials reviewed this format and developed a more complete and detailed format for documentation of all information submitted by the IPP applicants. This documentation format has been used for documenting the information from the various IPP license applications. In addition, we formalized a

complete list of requirements that all IPP applicants must comply with in order for their application to be accepted for consideration. Annex 1 of the Task 1 Report includes a comprehensive list of all requirements of an IPP applicant based on the Electricity Act 2007 and ECB's regulatory processes and rules.

The documentation of IPP applications includes the following types of information:

- Project Sponsor Details -- Name and contact details of the IPP developer;
- Technical Project Details – size, location, and primary energy source, key project characteristics, buyer of electricity, and overall project costs;
- Economic and financial analysis of the proposed project in accordance with an internationally acceptable methodology;
- Project Financial Details – total financing, sources of financing, amount and size of hardware, software, and construction services to be procured internationally;
- Preliminary indications of the environmental and developmental impacts of the proposed project; and
- A preliminary Power Purchase Agreement (PPA) or evidence of extensive late-stage discussions with NamPower or others for the sale of the electricity.

We also expanded the documentation format to include review information as well. The current documentation accomplishes the following key objectives:

- Documentation of all information submitted by the IPP applicant
- Comparison of the information submitted with the application requirements as detailed on ECB's web site
- Identification of any gaps and documentation of the gaps in information and comments on the importance of the gaps
- Detailed technical review of the application and documentation of conclusions of technical reviews such as applicability and feasibility of the proposed technology, technical parameters and efficiency levels proposed, sites proposed and the characterization of the sites, and other technical issues such as fuel supply agreements
- Evaluation of the economic and financial internal rates of the proposed project including the assumptions related to fuel prices, inflation, interest rates, and other economic parameters and documentation of the findings
- Evaluation of the financing plan proposed by the applicant and the reasonableness of the plan
- Evaluation of the applicant's financial capacity based on prior track record
- Detailed review of any PPA submitted by the applicant or any information demonstrating efforts by the applicant that discussions on power purchase have begun with a potential buyer

The format for the documentation of information and review results were updated, as necessary, throughout the duration of the Technical Assistance.

2.3 Findings, Conclusions, and Recommendations

ECB received a total of 13 IPP applications for licenses of which 3 applications were withdrawn by the applicants. Some key observations regarding these applications are as follows:

- The applications were well distributed in terms of large, medium, and small IPP projects.
- The technologies proposed varied widely as well from invader bush and wind to CCGT and IGCC technologies.
- There was considerable interest among Namibian investors in the IPP projects as evidenced by many of the applications. European vendors, as expected proposed wind power IPP projects.
- Despite very detailed Guidelines for IPP Applications posted on the ECB web site, the applications differed widely in terms of content, clarity, and detail. In addition, some of the applications were incomplete.
- None of the applications included a PPA or even a provisional PPA. The quality of economic and financial analysis proposed by the applicants was generally weak and in some cases non-existent.
- Many applicants submitted applications for multiple IPP projects and in some cases the applicants have either withdrawn an application or amended the application with a new project.

This pattern of applications indicated that both the ECB and the IPP industry need to improve the process so that the quality and completeness of the applications improves significantly. In addition to improving the process, it appears that ECB may need to consider one or two outreach sessions with the industry with the objective of explaining the IPP application and due diligence process in greater detail.

The IPP Application process allows any party to register an objection to an IPP application. All IPP applications are available to the public for review for a specified period. Thus far, there has been an objection by NamPower to one of the IPP applications. While this objection was addressed by ECB effectively based on current procedures, there is a need to strengthen this area of the IPP review process.

Another issue that became important in this area was the confidentiality of information. Because of the competitive nature of the industry, developers routinely require that their proposals be treated as confidential. It is possible that the applicants are not providing sufficient details in their applications because of the fear that their confidential information will be in the public domain and be available to their potential competitors. This issue was discussed within ECB, and CORE and ECB have developed an approach whereby ECB is able to get more complete information from the applicants on one hand, and the public is able to exercise its right to have access to the applications and make any necessary comments or objections on the other.

The process of reviewing the IPP applications was a great learning experience for ECB and CORE and two specific needs were identified as ways to further strengthen this process:

1. The overall process for the review of the application needs to be defined, recorded, reviewed by the public, and finally issued by the ECB as a rule/procedure and posted on its web site. This will be a beneficial step, as all

applicants will know in advance how their application will be reviewed and how the results will be announced.

2. NamPower will always be an important player in the country's power sector as the national utility of Namibia. Its role in a prospective IPP may take different forms – as a buyer of power from an IPP developer, an IPP joint venture partner, or a serious objector to the potential entry of an IPP into Namibia's market. Therefore, the need for NamPower and the ECB to work more closely together without interfering in each other's independent mandates was further stressed during various work sessions with the ECB. In many countries, this issue has been addressed through crafting and implementing clearly articulated MOUs defining the roles of the national utility (often a single buyer) and the regulator.

ECB places very high importance on both of these issues and has, therefore, initiated a parallel effort with CORE International on activities that go beyond the level of details included in the TORs for this TA.

Through a number of iterative exercises, ECB and the CORE Team settled on a consistent methodology for review and evaluation of the IPP applications. The process has three key parts to it that together define the entire review.

1. Documentation and Review of General Information
2. Technical Evaluation and Documentation of Findings and Conclusions
3. Economic and Financial Evaluation and Documentation of Findings and Conclusions

2.3.1 Documentation of General Information

The first part of the review was to examine the IPP applications and document all general information provided by the applicant. Next, this information was compared with the application requirements to identify any gaps in the information and document the gaps for further actions. General information means basic information regarding the applicant – name address, contact information, number of parties, relationship among the parties, current business status, financial standing, prior experience in similar projects, and related information.

2.3.2 Technical Evaluation

The next step in the process was to review all technical information related to the project and included in the application. This included such information as the proposed technology, fuel type and fuel supply provisions, site and site conditions and preparation requirements, any zoning problems associated with the proposed site, operation and maintenance issues and agreements, construction plans and schedules (if any), any feasibility study for the project, project performance standards and efficiencies claimed, and related technical details of the project. Once again, all such information was reviewed for clarity, completeness, reasonableness, and soundness. Also, any major gaps were identified where additional information or clarification was required. These were documented on the Application Review Form.

2.3.3 Economic and Financial Evaluation

The next step in the review process was to examine the economic financial information provided by the applicant. Specifically, the following type of information (if provided) was reviewed and any gaps or erroneous analyses were documented.

- Economic assumptions used by the applicant for conducting the economic analysis of the proposed project -- economic growth rate, electricity demand growth rate, GDP growth rate, wages and prices, and other economic parameters.
- Financial assumptions such as interest rates, price of oil, depreciation rates, taxes, insurance costs, O&M costs, capital costs, and related financial parameters.
- Power Purchase Agreement (if submitted) or any information related to the steps taken by the applicant to negotiate a PPA.
- Proposed price of electricity and annual escalations.
- Types of supply conditions

CORE International developed a methodology for assessing the economic and financial analyses of the proposed projects. This methodology and the model were provided to the ECB and are included in CORE's Task 4 Report included as Annex 4 to this Report. CORE also conducted a training program for ECB personnel in the use of the model. Annex 2 included as part of CORE's Task 1 Report includes all the materials used by CORE for training and capacity building of ECB staff.

The final part of the review process was to review each application as a whole and form a conclusion on the strengths or weaknesses of the application in totality as compared to similar IPP processes used internationally. This included additional items such as the financial standing of the applicant, any financing plan proposed by the applicant, any supporting documentation to demonstrate that the applicant has made a serious effort to investigate project financing, potential developmental impacts, and anticipated environmental impacts of the proposed project.

Annex I includes the Task 1 Report, which is confidential as it includes all information and data in the various IPP applicants' proposals.

3 TASK 2: DEVELOPMENT OF IPP FRAMEWORK AND IMPLEMENTATION INSTRUMENTS AND CAPACITY BUILDING OF ECB FOR IPP IMPLEMENTATION

This section provides a summary of Task 2 objectives, activities conducted under Task 2, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Task 2 Final Report to the ECB, which was accepted by the ECB. A copy of the Task 2 Final Report submitted to the ECB is enclosed as Annex 2 to this Report.

Under the Phase I TA, CORE developed frameworks for three different types of IPPs – large (over 100 MW), medium (10 - 100 MW), and small (1 – 10 MW). In this Phase of the TA, the first objective of Task 2 was to develop implementation instruments for large and medium/small IPPs. The second objective of Task 2 was for CORE to provide capacity building and skills development support to the ECB.

The CORE Team closely worked with ECB officials in conducting Task 2. The activities under Task 2 were mostly deskwork and consultation with the ECB at strategic points. In addition, the CORE Team conducted several work sessions with the ECB officials in the following areas:

- Application of the Economic and Financial Model for Evaluating IPP Project Proposals
- IPP Risk Due Diligence Process
- Collaboration Between ECB and NamPower on the IPP Process
- Institutional Issues Related to Managing the IPP Evaluation Process

Also, as part of Task 2, CORE International designed and delivered two comprehensive two-day courses to the ECB. ECB chose to invite a number of participants from outside the ECB including NamPower, Namcor, and the Ministry of Mines and Energy.

3.1 Subtask 2.1: Development of IPP Framework Implementation Instruments for Large and Medium Sized Projects

Subtask 2.1 focused on the development of a number of IPP framework implementation instruments. Specifically, CORE International developed a number of instruments that includes the following:

- Model formats for the logging and documentation of IPP applications
- Development of a methodology for an overall review of IPP applications and documentation of review results
- Development of a model for economic and financial analysis of IPP projects and the review of Power Purchase Agreements (PPAs)
- Development of a methodology for risk allocation and risk due diligence

As part of this subtask, the CORE Team worked with ECB managers and staff on a detailed plan for the implementation of the IPP framework for both large and medium sized IPP projects. Case studies were conducted on actual international projects.

Also, the economic and financial analysis model was applied to all of the actual project proposals received by the ECB.

3.1.1 Subtask 2.1.1: Large IPP Projects

The CORE Team worked with the ECB to develop an overall approach to IPP development in Namibia. This work included a detailed approach to documenting applications and procedures, the development of review methods for assessing and evaluating IPP applications, specific economic and financial tools for IPP projects, and a general and specific methodology for risk allocation to the various parties.

The specific characteristics and needs of large IPP projects were distinguished from medium and small IPPs. For large IPPs the CORE Team noted that fuel type, coal or natural gas, would play an important role in the kinds of information that would need to be furnished with an IPP application.

IPP Application Process

Applicants for IPP licenses in Namibia are presented with a format that has been published on the ECB website (<http://www.ecb.org.na/show.php?m=8&sm=21>). This general ECB site then directs the IPP applicant toward specific forms with explanatory guidelines that include the following two sites:

<http://www.ecb.org.na/pdf/ApplicantsGuidelineV4.pdf?m=8&sm=12>
<http://www.ecb.org.na/pdf/InformationReq.forIPP.pdf?m=8&sm=12>)

The guidelines are written in order to cover whatever types of proposals IPP sponsors might wish to submit. The guideline document is in keeping with generally accepted international practices. That is, there is an explanation of the legal background of the electricity sector and the legal status of independent producers (Sections 1 and 2). The Guidelines then go on to lay out the legal basis for the ECB regulatory oversight of IPP applications and licensing in section 3 and 4. The evaluation of applicants and the criteria for issuing licenses are covered in Sections 5-7, including the right of applicants to object to ECB decisions.

The guidelines also include a number of appendices that take up most of the document (25 of 35 pages) and detail the application and licensing procedures as follows:

- Appendix 1: License Application Extract from the Electricity Act, 2000
- Appendix 2: License Application Extracts from the Electricity Regulations: Administrative
- Appendix 3: Sample License Application Advertisements
- Appendix 4: Generation License Application Form
- Appendix 5: Objections Extract from Electricity Regulations: Administrative
- Appendix 6: Evaluation Criteria Extract from the Electricity Act, 2000
- Appendix 7: Fees Extract from the Electricity Regulations: Administrative
- Appendix 8: General Information about Namibia
- Appendix 9: Incentives for Manufacturers & Exporters
- Appendix 10: Foreign Investment Act
- Appendix 11: Land ownership in Namibia

Exhibit 3-1 shows the actual flow of applications through the process that has been established by the ECB. The detailed information that must be furnished by applicants is laid out after the Exhibit. This process is revised or updated by the ECB as new issues surface.

In addition, continuous dialogue is underway between the ECB and NamPower on the role of NamPower in the process. NamPower has two key roles as the national utility of Namibia. First, it is the buyer of electricity from any prospective IPP and therefore it has a negotiating role with the IPP for a viable and acceptable PPA before the PPA is submitted for approval by the ECB. Alternatively, NamPower can also be an IPP as a sole entity or in a joint venture with another IPP. Accordingly, the collaboration between the ECB and NamPower on the IPP process, specifically as related to the PPAs and any due diligence, needs to be crafted carefully in order to avoid any conflict of interest and ensure that the ECB regulatory process remains independent and transparent. CORE assisted the ECB and NamPower in this process through a number of work sessions between the two organizations.

In general, the ECB IPP application review process can be summarized as follows:

1. Once the application is received by the ECB (steps 1 & 2), it is checked for completeness and responsiveness to the data requirements as specified in the ECB data document cited previously (step 3). If the document is not complete the ECB provides the applicant an opportunity to fill in the missing data and resubmit the application within a specified deadline (steps 4 & 5), or certify that the application is complete (step 5).
2. Applications are then made available for public review (minus proprietary data, step 6), and public hearing may be conducted by the ECB Secretariat (step 7) as appropriate. Next, the ECB conducts a detailed review of the applications. Based on the due diligence, the ECB Secretariat makes an initial recommendation to the ECB Board regarding the application (step 8). Applications that are not approved (step 9) may be modified and resubmitted. Applications that are approved (step 10) will be passed on to the Minister of Mines and Energy for final approval. If the Minister approves an application (step 11), then the ECB Board will issue a license (step 13). Project sponsors whose applications are rejected will be informed directly by the Minister (step 12).

This process has been established to provide a transparent and easy-to-understand application and approval process that is consistent with both the policy goals of the Ministry of Mines and Energy and the governing electricity acts and regulations in the country.

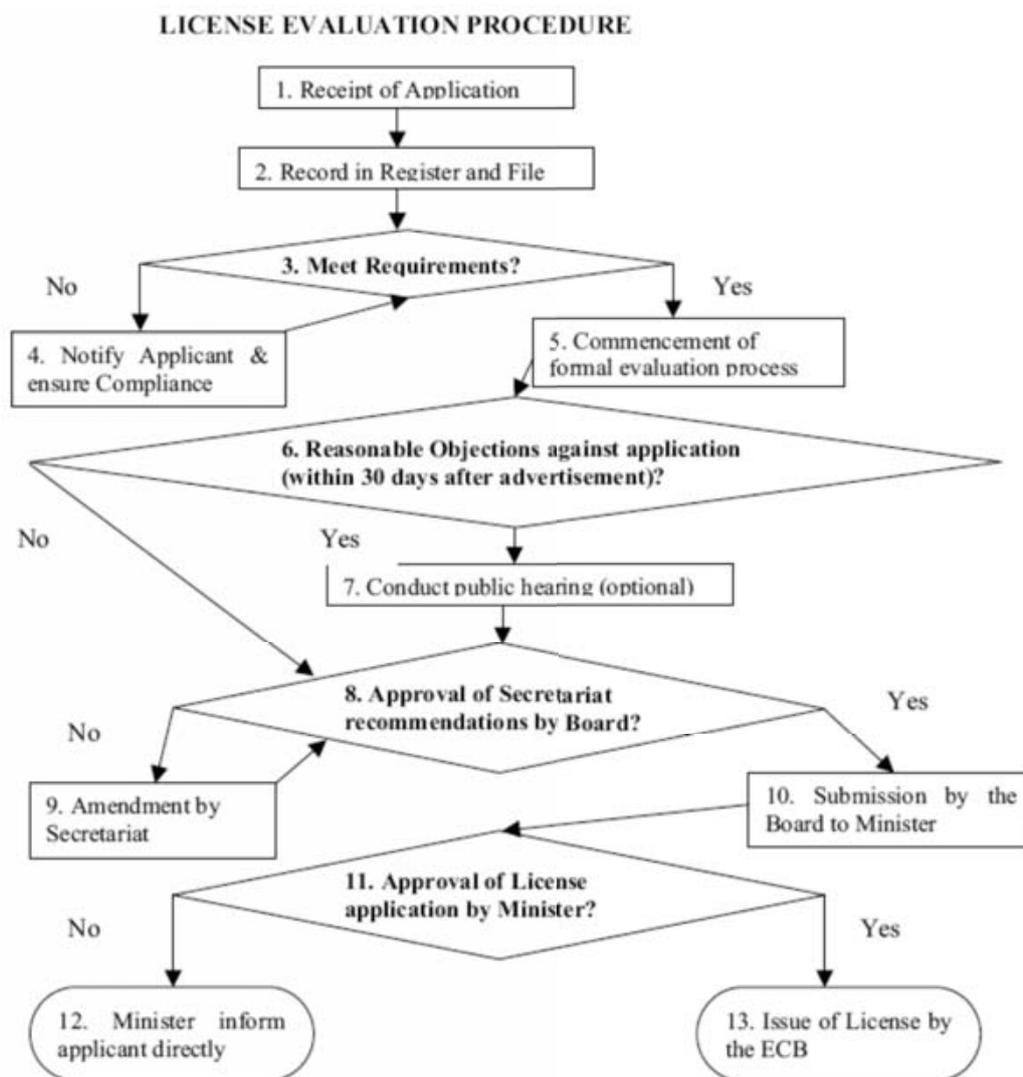
For large IPPs, the key steps in the initial application process are to get the applicants conversant with the procedures and data requirements. In particular, it will be necessary to assure compliance with the data inputs that ECB and NamPower will require for an appropriate risk assessment of the IPP application (unless NamPower itself is an applicant either alone or in partnership with another party). To this end NamPower has put together its own risk assessment. The NamPower risk assessment generally complements the ECB evaluation procedure. Continuous dialogue is underway between the ECB and NamPower to refine the due diligence process based on specific recommendation made by the CORE Team.

In the case of large IPPs the prospective project documents will cover the allocation of risks between and among the various parties. These agreements include:

- Fuel Supply
- Construction (EPC)

- Power Purchase (sometimes referred to as a Project Implementation Agreement)
- Operation and Maintenance, and
- Other agreements as necessary, for example, land use and conveyance

EXHIBIT 3-1: ECB IPP APPLICATION AND LICENSING PROCESS



The data requirements that have been implemented by the ECB for large IPP applicants cover each of these subject areas. The **Technical Review** covers the characteristics of the proposed IPP projects. Key technical characteristics for the review by ECB include the following:

- Power plant type – e.g., pulverized coal steam, CCGT, etc.
 - Conversion efficiency
 - Operational characteristics (load following capabilities, etc.)
- Technology evaluation - maturity and standardization
- Fuel type – coal, gas, oil
 - Fuel sources
 - Fuel quality
- Fuel supply proposals
- Construction period

- Plant operational lifetime
- Potential environmental and land-use impacts
- Prior track record of the IPP applicant on similar projects, if any

The economic and financial evaluation of the proposed IPP project is conducted based on specific information required as part of the application that includes the following:

- Economic and financial projections and the proposed tariff
- Assumptions used in the economic and financial analysis proposed by the applicant
- Sensitivity analysis
- Power Purchase Agreement (PPA)
- Financial capability of the applicant
- Financing plan proposed by the applicant
- Prior track record in mobilizing financing for similar projects
- Requirements for any assistance from the Government including any incentives
- Other relevant information that may affect the tariff for the delivered electricity

The data requirements specify the form in which the information is to be provided in the application. Such a standardization of information formats permits the ECB and NamPower to carry out economic and financial evaluations of the proposed power project on a standard basis. Prior to this data standardization the ECB found that a number of the IPP applications used different standards to report capacity, output, plant cost, expected tariff evolution and other key parameters.

3.1.2 Medium IPP Projects (10 – 100 MW)

All of the data and application process requirements that CORE developed with the ECB were meant to cover any type of IPP project. However, there will be some differences between large IPP projects and those of lesser generation capacity. Correspondingly, there are some provisions in both the application and data sides of the IPP procedures that will apply more to large projects than to smaller ones.

Large projects, almost by their nature, in a country the size of Namibia, will be one-off activities. There is little possibility of building, say, multiple coal-fired power plants (the Eskom “six-pack” of six 600 MW coal-fired stations at one location) in a system such as the one that NamPower operates. As a result, the technical specifications are given, not by NamPower, but by each applicant. For gas or oil-fired plants the technical evaluation is much the same, and for similar reasons – a lack of likely replicability of an individual project in Namibia.

Smaller power projects on the other hand, especially those based on renewable energy prime movers, will be different from the larger plants in several respects as follows:

- The technology is likely to be a standard one widely available elsewhere in the world
- The project’s impact on the operation of the NamPower system is likely to be slight
- Construction costs and operational characteristics are likely to be quite similar to experience in one or more other countries
- Smaller projects can be price takers, not price makers

The greatest single difference between large projects and other IPPs in Namibia rests on the overall system impact of the proposed project, both operationally and financially. Whereas smaller IPPs are used to a set of standard terms and conditions for prices, risk allocation, guarantees, land use, and the like, large project developers want to negotiate from a custom agreement template rather than a cookie cutter one.

The CORE Team has tried to keep these differences in mid when making allowances for the project agreements and risk allocation. For example, in the discussion of risk allocation in construction agreements, the CORE Team noted that large projects would generally use many customized parts and components, while smaller projects should be expected to use standardized and off-the-shelf components.

With respect to prices, a smaller project will be presented with a standard offer, with adjustments according to the ECB's own schedule. Larger projects will need to conform their pricing adjustments to the ECB's schedule, but the initial price level is likely to be vigorously negotiated. Some large IPP promoters may even resist the idea of adjustments on the ECB schedule, as evidenced by the "creative" pricing adjustments shown in the financial proposals of the large IPP projects.

ECB may entertain unsolicited bids for smaller IPP projects, but larger projects need to be solicited on the basis of a joint ECB-NamPower understanding of future generation needs.

The implementation agreements for IPPs should summarize the rights and responsibilities of the various parties. The ECB strategy in large projects must be to ensure that the public interests that it represents and the public policies that it is obliged to implement are part of the agreements from the beginning. In this sense, ECB will need to set specific framework conditions at the beginning of each IPP contract negotiation. These framework conditions should be consistent with the initial bidding and document requirements for a project to receive a preliminary license from the ECB.

For smaller projects the ECB will need to be more pro-active, controlling both the pace of the industry expansion and the legal terms and conditions for the implementation agreements. CORE has suggested that the ECB provide standard contract templates for these smaller projects, differentiated by technology and fuel type. A template PPA was prepared and submitted to ECB as part of Phase I of the Technical Assistance.

Annex I of the Task 2 Report (See Annex 2 of this Report) includes a number of tools developed by CORE International for the implementation of the IPP Framework. Specifically, the following IPP framework implementation tools and instruments are include

1. Detailed list of data requirements
2. Due Diligence procedures
3. Generic risk allocation guidelines
4. Risk allocation by project agreement – detailed discussion of issues and roles of parties
 - a. Fuel supply agreement
 - b. Construction agreement
 - c. Project Implementation agreement (PPA)
5. Economic and Financial Evaluation Model
 - a. Presentation on use of model

- b. Users guide (included with model)

3.2 Subtask 2.2: Provide Capacity Building and Skills Development Support to the ECB

The focus of this subtask was to provide capacity building to ECB staff in a number of areas directly relevant to implementing an IPP regime in Namibia. In accordance with the TORs for Task 2, CORE International proposed a series of courses for ECB's consideration, which included the following:

- Training in negotiation of large IPPs;
- Tender preparation and standard PPAs and licenses;
- Methodology for granting licenses to small IPPs;
- Best practices in arbitration and dispute settlement;
- Determination of cost of service and tariff review approaches;
- Grid code examples and regulatory procedures;
- Process for putting small IPPs on a price-taking payment schedule that is keyed to the NamPower or RED (Regional Electricity Distributors) wholesale electricity price;
- Regulatory governance as it impacts customer preparation and development of investor confidence to promote IPPs;
- Communications, outreach, public participation, and building consumer acceptance; and
- Power sector market competition and trade capacity building.

ECB selected two major topics with many subtopics from the above list. As a part of Subtask 2.2 (the training and capacity building component of this task), the CORE Team travelled to Windhoek, Namibia in October-November 2008 and conducted two sets of comprehensive two-day courses for the ECB staff. The first set of training course covered the IPP application process, information and data requirements, evaluation of applications and summary of key risk allocation issues as manifested in the project agreements. Topics covered in the workshops are listed in Exhibit 3-2.

EXHIBIT 3-2: TOPICS ON IPP APPLICATION PROCESS AND RISK ALLOCATION

Module 1: Generic Elements of the IPP Process	<ul style="list-style-type: none"> ➤ Power sector scenario ➤ Legal and regulatory framework ➤ Tariff structure and subsidy ➤ Actual and perceived private sector investment risks and barriers ➤ Mitigation of risks and barriers ➤ Government guarantees
Module 2: Roles of Various Parties – Government, ECB, and NamPower	<ul style="list-style-type: none"> ➤ Government: Legal framework and guarantees ➤ ECB: Regulatory framework and tariff fixation ➤ NamPower: IPP transaction and efficient management
Module 3: International Examples of IPP Successes and Failures	<ul style="list-style-type: none"> ➤ Examples and reasons of IPP successes ➤ Examples and reasons of IPP failures
Module 4: IPP Due Diligence Process – Key Requirements	<ul style="list-style-type: none"> • Established legislative framework • Laws enabling foreign ownership and control of IPPs

	<ul style="list-style-type: none"> • Clear, published and transparent license application review process • Independent regulation • Transparent tender/bid processes and evaluation criteria
Module 5: Documentation and Record Keeping	<ul style="list-style-type: none"> • Structure and frequency of records • Data details to be recorded • Software to be used • Ownership of software and data • Backup procedures • Period for which records of various types must be kept • Archiving procedures • Routine reporting of information • Events requiring notification of ECB or NamPower • Parameters to be monitored for <ul style="list-style-type: none"> ➤ Plant load factor ➤ Technical loss assessment and reduction ➤ Quality and reliability of power supply ➤ Technical and managerial changes ➤ Any other item as required by regulators
Module 6: Generic Process for IPP Risk Allocation and Risk Due Diligence – Including Practical Examples	<ul style="list-style-type: none"> ➤ Market risk / non-dispatch ➤ Foreign exchange rate changes ➤ Currency convertibility / availability and transferability ➤ Changes in fuel prices ➤ Costs due to change in law (such as taxes) ➤ Political risk
Module 7: Generic Power Purchase Agreements – Including a Few Practical Examples	<ul style="list-style-type: none"> ➤ Generic clauses and contractual format ➤ Detailed Schedules ➤ IPP project parameters ➤ Tariff and pricing ➤ Risk allocation ➤ IPP customers ➤ Power quality and penalty clauses ➤ Termination and cancellation conditions and procedures ➤ Mid-term review of PPAs ➤ Examples of PPAs
Module 8: Fuel Supply Agreement – Including Practical Examples	<ul style="list-style-type: none"> ➤ Generic clauses and contractual format ➤ Detailed Schedules ➤ Termination and cancellation conditions and procedures ➤ Source of fuel and fuel supply ➤ Fuel price stability ➤ Quantities of fuel supply ➤ Fuel storage and security ➤ Examples

In order to facilitate the economic and financial evaluation of the proposed IPP projects on a consistent basis, CORE International provided the ECB with an Excel-based model that calculates the essential economic and financial results for each

proposed IPP project, based on standardized format input data that each applicant must furnish (see Section 3.3.1).

As documented in the Task 4 Report, the deliverables for the economic and financial evaluation module and activity included the following:

- A training course in ECB headquarters in Namibia on economic and financial methods of project analysis;
- A simulation model appropriate to the needs of ECB for economic and financial analysis;
- Documentation for the model’s proper use;
- A second training course focused on specific uses of the model for IPP application due diligence; and
- Ongoing technical assistance and advice for ECB during the lifetime of the project as needed and appropriate.

The Financial model is currently in continuous use by the ECB, as it has proved adaptable to a variety of project types, financing proposals and tariff impact assessments. CORE International continues to provide technical assistance to the ECB in updating the model, specifically with regard to the changed assumptions resulting from the recent economic crisis worldwide.

At the request of the ECB a further set of training workshops was held after the “nuts and bolts” presentations on information, contracts, economic and financial evaluation and case studies. These workshops focused on the regulatory issues and challenges that face an IPP program in Namibia. The purpose of these training courses was to take the information of the documented procedures and translate them into actionable procedures for the ECB.

One of the particular purposes of this training and capacity building initiative was to sensitize the ECB to how it might best approach different types of IPP proposals. That is, the CORE Team made specific distinctions between large and small IPPs, fuel cycles and fuel types, and the role of a particular project within the country’s electric power system.

Exhibit 3-3 shows the content of the regulatory courses that were provided to ECB officials following the initial, more process-oriented courses:

**EXHIBIT 3-3: REGULATORY PROCESS AND PROCEDURE TRAINING
ACTIVITIES AT THE ECB**

Module 1: <i>Regulatory Role in the IPP Process – Some Do’s and Don’ts</i>	<ul style="list-style-type: none"> ➤ Regulatory Do’s (or good practice) ➤ Regulatory Don’ts (or bad practice)
Module 2: <i>Regulatory Governance in the IPP Process Implementation – Roles of ECB, NamPower, and the Ministry of Mines and Energy (International Best Practices)</i>	<ul style="list-style-type: none"> ➤ Role of ECB ➤ Role of NamPower ➤ Role of the Ministry of Mines and Energy
Module 3: <i>The Need for an NIRP -- Contents and Process</i>	<ul style="list-style-type: none"> ➤ What is an NIRP? ➤ How can national energy planning be driven? ➤ The NIRP process ➤ The value of an NIRP
Module 4: <i>Regulatory Determination on Risks and Financial Viability of</i>	<ul style="list-style-type: none"> • Risk determination of IPPS • Risk mitigation process

<i>IPPs</i>	<ul style="list-style-type: none"> • Financial viability of IPPs
Module 5: <i>Solicited Versus Non-solicited IPPs – Pros and Cons and international Best Practices</i>	<ul style="list-style-type: none"> • Pros and cons of solicited IPPs • Pros and cons of non-solicited IPPs • International best practices for IPPs
Module 6: <i>Detailed Case Study of a Successful IPP – Lessons Learned</i>	<ul style="list-style-type: none"> ➢ Reasons of successful IPPs Lessons learned
Module 7: <i>Customer Preparation and Investor Confidence Development – Roles of Various parties (ECB, NamPower, and the Ministry of Mines and Energy)</i>	<ul style="list-style-type: none"> ➢ Roles of ECB, NamPower, and Ministry of Mines and Energy in <ul style="list-style-type: none"> ➢ Creating awareness in customers about IPPs ➢ Developing investor confidence
Module 8: <i>Communications, Outreach, Public participation, and Building Consumer Acceptance</i>	<ul style="list-style-type: none"> ➢ Methods of communication ➢ Public participation ➢ Consumer acceptance process

The risk allocation and risk due diligence elements of the training courses were delivered in several of the modules. All of the discussion of project agreements, including a generic discussion of risk allocation was aimed specifically at the question of allocating risk – identification of the risk, who should bear it, how much it costs, and what are the consequences of inappropriate or missing risk allocation. The case studies of successful and not-so-successful IPPs in the second set of training courses focused on the role of the regulator, ECB, as the first line of decision-making in Namibia regarding the allocation of risk. There was one module that specifically focused precisely on the regulator’s role in risk identification and allocation.

The module on the role of the ECB and the module on solicited v. unsolicited IPP proposals was one of the places that primary distinctions were drawn regarding the variation of procedures in the ECB according to the project size. While much of the attention of the ECB has been taken up by the large IPP applications, it is likely that much of the actual work of the ECB on IPPs will be concerned with smaller projects.

3.3 Findings, Conclusions, and Recommendations

Namibia is undergoing a rapid transformation in its electricity sector. The following are some of the key developments in the electricity sector in Namibia:

- In November 2007, the Government of Namibia passed the Electricity Act 2007, which provides one of the most reformed and restructured environments for the power industry in the SADC Region, clearing the way for private power development in the country.
- The transformation of the Electricity Supply Industry (ESI) has resulted in the formation of three REDs. Two additional REDs are expected to be formed in the near future.
- ECB has issued guidelines for IPPs, which has resulted in a number of IPP proposals for licenses. ECB has issued several conditional licenses.

The activities in Task 2 addressed two of the highest priorities of ECB.

- IPP Due Diligence Process and Decision Making
- Capacity Building and Training of ECB Officials and Staff in Regulatory Aspects of IPP Decision Making

3.3.1 IPP Due Diligence and Decision Making

In the completion of Task 2 one of the major elements of the project was completed and transferred to the ECB. Prior to the completion of this task CORE and the ECB staff worked together on IPP applications in terms of data quality, sufficiency and applicability. Once the process was transferred to the ECB they proved able to work with the tools provided by CORE and are now independent of the CORE advisors, with the exception of the occasional clarifications and advice on various technical issues.

Such a transition in roles is the precise intent of this project and CORE is proud to have been a part of this process for the ECB and Namibia. One of the most promising areas of knowledge transfer was with the economic and financial evaluation of IPP proposals. Prior to this project IPP applicants were able to go to the ECB with a financial model of dubious validity, generality, or appropriateness to Namibia. Through the process of developing, training and reworking this model, all in close collaboration with the ECB; the CORE Team was able to provide two key elements of improvement for the ECB team:

1. The minimum data set required to evaluate a project properly was specified for all applicants
 - a. Units
 - b. Terms
 - c. Tariff assumptions
2. The ECB team was able to use the model to “reverse engineer” bids that contained non-standard methods, data or assumptions, so as to determine the key implicit assumptions of the applicants as regards tariff adjustments, financing, project costs and the like.

The evaluation methodology is now entirely in the hands of the ECB. On the risk allocation side the ECB now has guideline documents for the key risk allocation agreements and case studies that show how successful and unsuccessful projects have implemented many of these agreements. Of particular use has been the impetus to standardize the allocation of risk and pricing for smaller IPP projects. The information, case studies and other documentation provided by CORE have given the ECB a standard by which IPP project proposals can be assessed.

Most important of all is that the evaluation process that the CORE Team has developed with the ECB has been in a very real sense a joint activity, with much back and forth on issues both large and small. It is open and transparent, conforms to Namibian Law, and is accessible to all potential IPP project developers. To this end the IPP application, data, evaluation and decision process now belong very much to Namibia, which was precisely the purpose of the project.

3.3.2 Capacity Building and Training of ECB in Regulatory Decision Making

Both during the Phase I Technical Assistance and this project, it has been clear that the capacity of ECB needs to be continuously enhanced. Even before the need for the development of the IPP regime ECB was short of staff. With the significant additional burden of documenting and evaluating IPP project proposals, ECB must now engage in a large number of additional technical and management functions including the following:

- Publishing guidelines for IPP applicants and updating the guidelines based on new developments and any changes in the Law

- Extensive documentation of initial applications and engagement with the IPP applicants throughout the decision-making process
- Due diligence and application evaluation to assess the desirability of proposed IPP projects and either rejecting the application or providing the applicant a full or conditional license
- Monitoring all conditional licenses and responding to any disputes of ECB decisions
- Extensive need for public hearing on the IPP proposals as warranted
- Coordination with relevant government agencies
- Coordination with NamPower on key IPP issues

All of these and related requirements have imposed a considerable burden on the existing ECB managers and staff.

In addition, with the opening of the Namibian power market to IPPs (both domestic and international), there is a need for the ECB staff and officials to be fully conversant with international practices and norms related to regulatory aspects of IPP project decision making. This means that ECB managers and staff are in need of constant upgrading of their skill sets in a variety of technical, economic, and financial areas. Experience around the world shows that it is relatively common to expect legal challenges and disputes from the IPP applicants who are rejected or provided only a conditional license. This will add further burden on the ECB in terms of legal due diligence and dispute settlement.

These realities mandate that ECB focus on two key issues urgently. First, it is necessary to conduct a full management review of the ECB in light of its increased responsibilities and develop an optimum organizational structure and staffing plan consistent with international practices and the needs in Namibia. Secondly, ECB needs to adapt a Training Program for commissioners, executives, and staff along the lines of the recommendations made by CORE both in the Phase I TA and under this project. The final Training Program to be adapted by the ECB should become married to the ECB culture and appropriate resources should be committed to implementing the program including an aggressive strategy to seek external donor financing.

3.3.3 Recommendations

Based on extensive interactions with ECB managers and staff as well as NamPower officials and an analysis of the IPP project applications the CORE Team has provided continuous advice to the ECB aimed at strengthening its IPP due diligence and decision-making process. The following is a summary of key recommendations in this area:

1. ECB should periodically update the assumptions in the economic and financial model based on changes in the international markets and the world economy, as is currently the case. For examples, fuel prices have significantly changed in recent months and that would have an impact on all IPP projects. Notwithstanding the need for periodic updating of the model, ECB reserves the right to ask IPP applicants for a revised proposal at any time.
2. ECB should consider the desirability of posting the model on its web site under Instructions to IPP Applicants requiring that all IPP applicants conform to the model as closely as possible when submitting their project applications.

This would have the added advantage that ECB would be able to compare and contrast like IPP project proposals.

3. ECB should develop a specific tariff regulation for IPPs. This regulation should provide a firm legal underpinning for an orderly adjustment of infeed tariffs for IPPs based on the ECB's own tariff adjustment process. The guidelines for such a regulation are provided in the risk allocation memorandum that was provided to ECB as a part of both this Task and Task 1.
4. One of the key areas that needs urgent attention is the collaboration between the ECB and NamPower on a host of issues related to the development of an IPP industry in Namibia. Despite a number of extensive work sessions including some with the participation of CORE Experts there continue to be many gaps in this area. At a minimum, ECB and NamPower need to develop specific guidelines for the division of labor in negotiating PPA – what size/type of projects fall into the province of each one, the technical assistance role of NamPower to ECB, etc. Furthermore, the process of collaboration between the ECB and NamPower needs to have the commitment of the top management of the two organizations and institutionalized into the day-to-day working of the two bodies.
5. ECB and NamPower should investigate risk allocation by fractional ownership of IPPs by different parties – developers, large users, foreign buyers. This method of risk allocation has been used to good effect in other countries and is sometimes referred to as a “vertical slice” project ownership model. In this regard, the discussions underway between the ECB and NamPower should be intensified and appropriate conclusions finalized as soon as possible. This is critically important so that ECB and NamPower do not end up inadvertently giving conflicting information to the IPP industry.
6. Namibia currently does not have a National Integrated Resource Plan (NIRP). Typically such a plan guides the development of the energy industry in a country and prioritizes the allocation and use of resources. It is recommended that the Government of Namibia commission the development of an NIRP as soon as possible. The process of NIRP development should be managed by an independent entity such as the Ministry of Mines and Energy or the ECB and not by a party with a vested interest such as the national utility or any of the REDs. Under Task 3, CORE International developed and provided to the ECB Draft Terms of Reference and budget for developing an NIRP for Namibia.
7. In addition to streamlining the process for review of IPP proposals, the Government of Namibia also needs to streamline the institutional structure to manage the development of the IPP industry in Namibia in accordance with all applicable Namibian Laws. CORE recommends that the GoN consider appointing a high level “IPP Working Group” and charge the group with the responsibility for guiding the development of the IPP industry in the country.
8. As mentioned previously, the economic and financial model will need to be revised and updated on a regular basis – all such models do – and the ECB should ensure that there is an understood and transparent process for updating both the logic and data of the model.

In the area of capacity building and skills development, detailed recommendations have been provided to the ECB through the Phase I and under this Phase II Technical Assistance. Therefore, in this section, we are highlighting only the most critical needs for capacity building and training.

- Conduct a management review of ECB's structure, operations, functions, and develop a management and staffing plan to effectively discharge the full array of ECB's mandated responsibilities including the regulation of the IPP industry.
- Finalize and implement a Training Program based on the Training Needs Assessment Report submitted by CORE previously.

4 TASK 3: TECHNICAL ASSISTANCE TO THE GRANTEE IN THE DEVELOPMENT OF AN INTEGRATED RESOURCES PLAN (IRP) AND THE DISTRIBUTION GRID CODE

This section provides a summary of Task 3 objectives, activities conducted under Task 3, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Task 3 Final Report to the ECB, which was accepted by the ECB. Annex 3 includes the stand-alone Task 3 Report.

The objective of Task 3 was to provide technical assistance to the Grantee in two areas: (i) development of an Integrated Resource Plan (IRP) and (ii) development of a Distribution Grid Code. CORE's role was to provide expert technical assistance for the development of these two documents including work sessions, detailed outlines, and guidance on the type and frequency of data needs. The actual development of the document was left to the ECB in accordance with the TORs in the USTDA Grant.

The CORE Team closely worked with ECB officials in conducting Task 3. The activities under Task 3 were mostly deskwork and consultation with the ECB at strategic points. The Team developed a draft NIRP action plan and submitted it to the ECB for comments. Based on comments received from the ECB, the CORE Team submitted a detailed action plan and terms of reference for ECB to commission the development of an NIRP. In addition, as required under the TORs, the CORE Team provided ECB with a number of IRPs developed in other countries that may be used by the ECB as a basis to guide its own development of the NIRP.

Furthermore, as part of the second part of Task 3 – the development of a draft distribution grid code -- the CORE Team submitted several drafts of a Distribution Grid Code that were commented upon by ECB officials. The final draft of the Distribution Grid Code was accepted by ECB as fulfillment of the requirements of this task.

4.1 Subtask 3.1: Provide Technical Assistance for the IRP

Subtask 3.1 focused on the following specific activities:

- Research and Review of a number of NIRPs developed by various countries to draw implications for Namibia
- Development of the first draft of an Action Plan for the ECB to proceed with the commissioning of a consultant team to develop an NIRP for Namibia
- Consultations with NamPower personnel on the contents of the NIRP
- Finalization of the detailed TORs for the NIRP for Namibia

At the request of ECB, CORE is also assisted ECB in seeking donor support for the funding needs of the NIRP.

In addition, as required in CORE's TORs, CORE has provided ECB with copies of a number of NIRPs in a CD-ROM. The workshop for the NIRP has been postponed due to travel schedules of many ECB staff and will be included as part of Task 4.

4.2 Subtask 3.2: Technical Assistance for the Development of a Distribution Grid Code

This subtask focused on the development of a draft distribution grid code for Namibia. The development of the distribution grid code was guided by two key documents – (i) the Generation Grid Code developed by ECB and (ii) the distribution grid code developed by South Africa.

In addition, the CORE Team researched and reviewed some six distribution grid codes developed by utilities and regulators in the U.S. and other countries to the extent they were relevant to Namibia. Namibia is in a transition mode in its distribution sector with three REDs already established and two additional REDs to be established soon. It is important for the REDs to operate with a standardized distribution grid code. Accordingly, ECB plans to issue a Draft Distribution Grid Code for public comments later this year and issue the final Grid Code later this year.

4.3 Findings, Conclusions, and Recommendations

The activities in Task 3 address two of the highest priorities of ECB. The draft Distribution grid Code submitted to the ECB will form the basis for ECB to move forward with the stakeholder consultative process and issue a final Distribution Grid Code later this year. In addition, as soon as funding is organized, ECB plans to move forward with engaging a consultant to assist with the development of an NIRP for Namibia. The NIRP will provide guidance to the local and international industry for the development and management of energy supply as well as energy conservation and demand side management. It will also streamline the process of utilization of energy resources and a balanced development of the energy supply and demand strategies.

Together, the Electricity Act 2000, the IPP guidelines, the distribution grid code, and the NIRP will place Namibia's energy sector in a solid position to guide the country's energy sector transformation and address the energy crisis both in Namibia and the region.

The recommendations resulting from Task 3 follow the findings quite naturally:

1. ECB should proceed with the commissioning of a consultant to undertake the development of an NIRP for the country as soon as funding is secured.
2. ECB should proceed with the stakeholder consultative process on the Draft Distribution Grid Code. Issuance of the final Distribution Grid Code will harmonize the distribution sector in the country and provide the REDs a common code of operations and service provision.

5 TASK 4: DEVELOPMENT OF METHODOLOGY FOR ECONOMIC AND FINANCIAL ANALYSIS OF IPP PROJECTS

This section provides a summary of Task 4 objectives, activities conducted under Task 4, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Task 4 Final Report to the ECB, which was accepted by the ECB. A copy of the Task 4 Final Report submitted to the ECB is enclosed as Annex 4 to this Report. It also includes all the training materials.

5.1 Objectives of Task 4

The specific task elements and activities to accomplish the objectives of Task 4 included: (i) provision of a simple, yet powerful, economic and financial analysis model for ECB; and (ii) training of ECB staff in the use of such a model, including due diligence of proposed IPP investments. The CORE Team divided this task into three activities: (i) a course on economic & financial analysis; (ii) provision of an economic and financial analysis model and exercises on constructing economic & financial analysis based on current IPP applications; and (iii) documentation & templates for model and input data requirements. As part of this task, the CORE Team conducted two specific training programs for key ECB staff in the use of the model on actual IPP project license applications submitted to ECB.

5.2 Activities Conducted Under Task 4

The CORE Team Leader worked closely with ECB's Head of Tariffs and staff in conducting Task 4. The activities under Task 4 were mostly split between deskwork conducted at the home office and training sessions with ECB staff in Windhoek. Two trips to Namibia were made in conjunction with this Task. The Team Leader provided an introduction to the skills required to analyze and assess projects from an economic standpoint, and the full presentation given at that time is included as an annex to the Task 4 Report (See Annex 4). Subsequent to that initial mission CORE adapted and developed a financial and economic simulation model based on a simulation model already used for numerous World Bank projects, as well as the Due Diligence task (Task 1) for this project. After initial exposure to the model some significant modifications were made to the modeling framework, including the use of additional foreign currencies and estimates of various project parameters.

The first part of this task included a course on economic and financial analysis of IPP projects and focused on the following specific activities:

- Prepare ECB staff to use a financial and economic simulation model
- Conduct a course for ECB staff on the elements of economic and financial analysis
- Develop and adapt a financial and economic simulation model for use by ECB staff to evaluate IPP applications;
- Train ECB staff in the use, strengths and weaknesses of such a model; and
- Use the model as an element in the due diligence to be performed on proposed private power generation plants.

In February 2008 CORE experts travelled to Namibia and presented a workshop on present value methods and economic/financial analysis. The Workshop took place over 4 days and was primarily attended by the officials of Tariff Department at ECB. Other ECB managers also participated in the workshop. An existing economic and

financial simulation model of power plant investments was chosen to be adapted for modification for this project. Of a number of available simulation models, the particular one chosen has proved remarkably robust and adaptable to a wide variety of settings and project types. This model was introduced to the ECB staff in February 2008 and a copy of the model was installed on the ECB system in order for the ECB managers and analysts to begin using the model.

Subsequent to the February Workshop, there were further adaptations of the model for the ECB. These included the addition of new parameters for plant efficiency, plant operational factors (hours per year of operation), additional currency choices, expression of all energy analysis in SI units, among others. These additional capabilities are presented in easy-to-use menu formats. An earlier version of this model was used to perform the project due diligence that was included in the Task 1 Report, so the simulation analysis has been well adapted and vetted for the Namibian situation. The data requirements of the model were also used as the template for the financial and economic data requirements now imposed on potential investors.

A second training Workshop was conducted in late-July early August 2008 at ECB to hand over the control of the economic and financial due diligence process to the ECB staff. This workshop focused on training in the specific uses of the financial/economic model, its application to real IPP opportunities and interpretation/reporting of results. It was critical to engage the ECB staff in the actual reporting and interpretation of results for current IPP applications in order to assess the degree of progress attained by the Tariff Department staff on the use of the model. Examples of the materials used in the second workshop are contained as annexes to the Task 4 Report submitted to the ECB separately and included as Annex 4 to this Report.

Full Instructions for the use of the analysis model are included on the second sheet of that model. The instructions use hypertext connections so that the user can move quickly from the instructions to the model and back. The Task 4 Report (Annex 4) shows the instructions sheet for the model as well as a final version of the data template that was provided for ECB to be used in its IPP applications.

All of the deliverables scheduled for this Task have been given to ECB in electronic form. Technical assistance has been provided on an as-needed-basis throughout the life of the project. As noted previously, these deliverables include the following:

- A training course in ECB headquarters in Namibia on economic and financial methods of project analysis;
- A simulation model appropriate to the needs of ECB for economic and financial analysis; and
- Documentation for the model's proper use; and
- A second training course focused on specific uses of the model for IPP application due diligence.

5.3 Findings, Conclusions, and Recommendations

The following key findings have emerged from the training in financial and economic analysis:

- ECB staff are able to perform many of the due diligence functions required to assess the financial impacts of proposed IPPs;

- Additional efforts will be needed to assure the sector participants that ECB is fully operational in its due diligence and tariff impact assessment capabilities. To do this ECB will need:
 - Additional contact time with IPP applicants and their data
 - Interaction with NamPower and with potential investors
 - Additional experience in meeting deadlines for completion of due diligence and issuance of reports on potential investors

NamPower and ECB are almost “harmonized” with respect to the data that they require on the financial and economic side. Some additional steps are needed to make sure that there are no contradictory data or format requirements by the two organizations that must work closely together. Ideally, the financial and operational data required by ECB should be a subset of the type of data required by NamPower.

6 TASK 5: DEVELOPMENT OF GUIDELINES FOR ENVIRONMENTAL ANALYSIS OF IPPS

This section provides a summary of Task 5 objectives, activities conducted under Task 5, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Combined Task 5 and Task 6 Final Report to the ECB, which was accepted by the ECB. The combined Task 5 and task 6 Report is included as Annex 5 to this Report

6.1 Task 5 Objectives

Namibian environmental laws and standards are consistent with international standards, and all projects, whether publicly financed or privately developed and financed, require the project sponsors/owners to conduct an environmental impact assessment. These environmental impact assessments will also be required of all IPPs, whether negotiated or invited through a tender. The objective of Task 5, therefore, was to advise the ECB on a detailed methodology for requiring that environmental assessments be carried out for all IPP projects.

6.2 Activities Conducted Under Task 5

The CORE Team reviewed the environmental standards applicable in Namibia and those of potential lending agencies, and provided advisory support to the ECB on the standard language to be included in all IPP proposal requirements with respect to environmental impact assessment of the proposed power project. The following is a summary of the activities.

The objectives of an Environmental Impact Assessment (EIA) can be divided into two categories. The immediate aim of the EIA is to inform the process of decision-making by identifying the potentially significant environmental effects and risks of development proposals. The ultimate (long term) aim of an EIA is to promote sustainable development by ensuring that development proposals do not undermine critical resource and ecological functions or the well-being, lifestyle, and livelihood of the communities and peoples who depend on them.

Immediate objectives of an EIA typically are to:

- Improve the environmental design of a project proposal;
- Ensure that resources are used appropriately and efficiently;
- Identify appropriate measures for mitigating the potential impacts of the proposed project; and
- Facilitate informed decision-making, including setting the environmental terms and conditions to be addressed by the developers as part of project implementation.

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Long-term objectives of EIA typically are to:

- Protect human health and safety;
- Avoid irreversible changes and serious damage to the environment;
- Safeguard valued resources, natural areas and ecosystem components; and
- Enhance the social aspects of the proposal.

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Environmental impacts can vary in a number of ways as follows:

- Type – biophysical, social, health or economic
- Nature – direct or indirect, cumulative, etc.
- Magnitude or severity – high, moderate, low
- Extent– local, regional, trans-boundary or global
- Timing – immediate/long term
- Duration – temporary/permanent
- Uncertainty – low likelihood/high probability
- Reversibility – reversible/irreversible
- Significance¹ – unimportant/important

The CORE Team provided a detailed report to the ECB that included the (i) classification of IPP projects for environmental assessment, (ii) guidelines for the preparation of an environmental assessment, and (iii) standard World Bank Guidelines for Environmental Impact Assessment.

The most important task is to screen the IPP projects for the level and detail of environmental analysis that would be satisfactory to all stakeholders. The screening process to decide whether or not an IPP project proposal should be subject to the EIA process can have one of four outcomes:

1. No further level of EIA beyond that submitted by an IPP applicant in the application is required;
2. A full and comprehensive EIA is required;
3. A more limited EIA is required (often called preliminary or initial assessment); or
4. A further study is necessary to determine the level of EIA required (often called an initial environmental evaluation or examination).

Screening establishes the basis for scoping, which identifies the key impacts to be studied and establishes the terms of reference for an EIA. Many EIA systems have formal screening and scoping procedures. In some cases, however, these terms may be used differently or applied at the discretion of the proponent (as with scoping in the European EIA Directive). Also, on occasion, the screening and scoping stages may overlap, for example, when a further study is undertaken to determine whether or not the potential impacts are significant enough to warrant a full EIA.

Thermal and hydropower projects require a full EIA because of their likely environmental effects and the World Bank has placed them under category A. Renewable energy power projects (other than hydro power) not requiring a full EIA but warranting a further level of assessment are typically placed in Category B by the World Bank, requiring a reduced level of EIA.

Scoping of the detail for an EIA refers to the early, open and interactive process of determining major issues and likely environmental impacts that will be important in the decision-making on the project proposal, and would need to be addressed in an EIA. The requirements and procedures established for this purpose differ from country to country. In many EIA systems, the involvement of the public, as well as the competent authority and other responsible government agencies, is an integral part of the scoping process. Public input helps to ensure that important issues are

¹ Impact significance is not necessarily related to the impact magnitude. Sometimes very small impacts, such as the disturbance of the nest of a pair of endangered birds, may be significant. When determining the significance of the potential impacts of a proposal, all of the above factors should be taken into consideration.

not overlooked when preparing Terms of Reference and/or initiating an EIA study for a project.

6.3 Findings, Conclusions, and Recommendations

A copy of the Task 5 and task 6 Combined Final Report submitted to the ECB is enclosed as Annex 5 to this Report.

Based on the provisions of the Environmental Management Act of 2007 Namibia and the IPP Project Evaluation Matrix developed as part of this TA, ECB should develop two sets of specific environmental assessment requirements of any IPP projects. The burden for this assessment should be on the project developers and implementers and this should be a condition of license to any project developer. The first set of requirements should be for major conventional power generation projects and the second set of requirements should be for renewable energy based IPPs (typically smaller). World Bank guidelines should also be considered as some of the IPP project developers may approach the World Bank and the International Finance Corporation, the private sector arm of the World Bank, for equity or debt financing for specific components of the project. In addition, if the developer proposes export credit financing from the export-import banks in various countries, these institutions may have their own guidelines for environmental assessment. Therefore, ECB should require that the environmental impact assessment should conform to not only Namibian environmental requirements but also those of financial institutions proposed by the developers as sources of debt and equity financing for the proposed project.

In order to facilitate a smooth process, it would be appropriate for ECB to post these environmental assessment requirements for IPP projects on its web site and as part of the applications requirements. Prior to the finalization of these requirements, ECB will need to coordinate with various concerned ministries, NamPower, and the public in order to ensure that the requirements are not too restrictive on one hand and represent the public's interest on the other.

7 TASK 6: ANALYSIS OF DEVELOPMENT IMPACTS

This section provides a summary of Task 6 objectives, activities conducted under Task 6, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Combined Task 5 and Task 6 Final Report to the ECB, which was accepted by the ECB. A copy of this report is included as Annex 5.

7.1 Objectives of Task 6

The objective of Task 6 was to focus on what the economic development outcomes would be if the project were implemented according to the recommendations of the technical assistance. While specific focus was to be placed on the immediate impact of the project, CORE's analysis included, where appropriate, any additional development benefits to the project, including spin-off and demonstration effects. The objectives of the task also required that the analysis include a description of any negative impacts. Task 6 required for CORE to provide estimates of the project's potential benefits in the following areas:

Infrastructure: A statement on the infrastructure impact giving a brief synopsis. This shall include additions and improvements to electric power generation and transmission systems; roads and other transportation systems, water systems, housing, etc.

Market-Oriented Reform: A description of any regulation, laws, or institutional changes that are recommended and the effect they would have if implemented.

Human Capacity Building: The number and type of positions that would be needed by the Grantee to implement the recommendations, and more broadly, by the electric power industry, as well as the number of people who will receive training and a brief description of the training program. This also shall include identifying improvements in skill sets and in the knowledge base.

Technology Transfer and Productivity Enhancement: A description of any advanced technologies that will be implemented as a result of the project, and a description of any efficiency that will be gained.

Other: Any other development benefits to the project.

The scope of Task 6 required CORE to identify the potential developmental impacts of a range of IPP projects, using as examples, some representative IPP projects currently being contemplated in Namibia. In consultation with the Grantee, the CORE was also required to develop a list of development impact requirements that shall be included in all tenders for IPPs as well as required of all unsolicited IPP proposals.

7.2 Activities Conducted Under Task 6

The proposed technical assistance to ECB is devoted to preparing the ECB to exercise its regulatory role in a reforming power market in Namibia. In keeping with Vision 2030, it is clear that Namibia will need to add significant new power capacity, much of which has to come from IPPs. Accordingly, the development impacts of the technical assistance need to be measured at two levels as follows:

1. **Direct Impact on the Capacity and Human Resources of ECB** – These include impacts such as increased skill levels, improved regulatory governance, improved environment for private participation in Namibia’s power sector, improved transparency and accountability in the power sector, greater investor confidence, increase in customer satisfaction in terms of quality of service, and related tangible governance improvements creating a better climate for large private sector investments in the country’s power sector.
2. **Downstream Impacts of any IPP Investments** – These will include impacts such as additional employment, contribution to the country’s GNP, and increased business investment. Increase in urban and peri-urban development and infrastructure investments leading to further new jobs, enhanced energy security and quality of life, benefits to consumer resulting from market competition and improved sector efficiency, and other direct and indirect economic benefits.

The methodology used by most analysts and the development finance institutions such as the World Bank, African Development Bank (AfDB), Asian Development Bank (ADB), and the European Union (EU), albeit different in the levels of detail, are similar in terms of the approach used by CORE to classify the various types of development impacts. In the energy sector, a large number of stakeholders are involved and therefore, the methodology for assessing development impacts should take into account all stakeholder groups that will be affected, directly or indirectly, by the improved environment for IPPs, and then examine what the impact on that group will be beyond what can readily be captured in project financial feasibility study’s financial rate of return (FRR) analysis. Impacts are typically described as costs or benefits. Where quantification is impossible, as in assessing the value to others from the current USTDA technical assistance to ECB, qualitative judgments of value based on other similar initiatives elsewhere have been made.

Developmental impacts of the current technical assistance to Namibia on key stakeholders in addition to the ECB as an institution will be as follows:

Financiers:

A part of the current TA has addressed the barriers on the banking system and its ability to participate in financing upcoming IPPs in Namibia. As a result of the TA, specific recommendations have been made that will significantly improve the market rules and regulatory oversight. This will provide the financial institutions a level of comfort that is expected to induce new investments in the power sector in the country.

Employees of Enterprises:

Net benefits of more power plant construction and operation likely to result from the entry of IPPs in Namibia’s power sector will include increased wages received by employees as compared to alternative employment as well as health, pensions, special housing or access to special schools or similar fringe benefits. Other benefits to employees include training received as a consequence of employment in an IPP project company. Additional benefits will come from improved sector performance resulting from manager training as well as training in the use of new technology and new business methods by the power sector workforce.

Customers:

As ECB moves forward with many of the recommendations resulting from this TA, significant benefits to consumers from increased access to power are anticipated. Both the consumers that previously did not have access to electricity as well as those with improved services and more reliable supply of power will benefit in terms of both improved quality of life and enhanced economic activity.

The benefit to new consumers is how much they would be willing to pay for the electricity, that is, the area under the market demand curve. What they in fact pay is the market price, but this portion of the benefits is already counted as the revenues accruing to the project financiers from electricity sales. Better quality power to existing customers will bring additional benefit, if sold at the same price that is not included in the financial rate of return. Since the Project will add to the supply of the electricity in the market, the price of electricity may be reduced for additional benefit.

Producers of Complementary Products:

A complementary good is one whose value to the consumer increases when the supply of the good it is complementary to increases. Power sector improvements typically trigger significant increases in agricultural, commercial and industrial production. These are discussed below. Two diverse prime examples of complementary products are mining equipment and mobile telephony. Cell phone use is skyrocketing in Africa and electric power is needed critically to recharge batteries, operate microwave transmission towers and for other purposes. Crushing and heating rock for extraction of ores or stones requires a great deal of electricity. The more of such energy that can be supplied at a reasonable price, the greater will be the growth of that sector of the Namibian economy.

Suppliers:

Maintenance and operation of a new power plant will increase demand for suppliers of these goods and services and hence produce higher profits. Similarly, the increase in wages (beyond what they would have been receiving elsewhere) of the additional workers employed by the suppliers will also be a direct development benefit of additional new power plants in the country.

The creation of new supplier networks can be extremely important to the development of Namibia. Quantifying their value to society will probably be too difficult, but at a minimum the value would include the extra profits they are now earning plus the extra wages of additional workers employed.

Competitors and New Entrants:

Some existing competitors—for example, the suppliers of back up diesel generator sets, suppliers of on-site power for mining operations—may see a reduced demand for their products. Positive impacts on competitors also exist and these might include demonstration effects. The project may demonstrate to others:

- The viability of some new technology, such as energy-saving or efficiency enhancing power equipment, renewable energy resource utilization for new power generation, etc.
- The viability of reorganizing a business that is inherent to this change in the power system structure
- The viability of some market that previously had been of uncertain size or strength
- Corporate best practice

- The availability of finance, perhaps in the innovative way IPP transactions will be structured.
- Positive effects on supplier or other networks.

New entrants may be drawn into the power market because of the value of these demonstration and network effects. In contrast to existing market participants, there can be no doubt that new entrants benefit as they were not in the market at all before. Arriving at a quantifiable social value for this is not possible in the absence of a concrete project.

Neighbors:

“Neighbors” is used here as a loose term for all those who may be affected by an IPP Project, but who do not have a direct market relationship with the Project, i.e., they are not investors, employers, employees, customers, suppliers, or competitors. Impacts on neighbors that will be considered include environmental externalities, new infrastructure made possible by the availability of reliable electric power, and the development of social infrastructure. The construction of new IPP plants will impact the further development of the social infrastructure of the community: theaters, restaurants, community centers, and so on, some of which might not have been viable before an IPP investment came into operation.

7.2.1 Subtask 6.1: Analysis of Development Impacts in Namibia

Exhibit 7-1 categorizes the expected development impacts from future IPP constructions in Namibia that are expected as a result of overall sector reform and the establishment of an enabling environment for private power investment, the focus of the USTDA technical assistance to the ECB.

7.2.2 Subtask 6.2: Development Impact of IPP Projects

An excellent paper on the subject is a Discussion Draft Paper: Independent Power Production – Benefits to Local Communities, prepared by R. Guy Heywood, Renaissance Power Corporation. This paper discusses the case of British Columbia Hydro and focuses on small IPPs. For a 7 MW IPP project, for example, the development impacts are quantified as follows:

- | | |
|-------------------------------------|---|
| • Total Capital Cost | CAN \$15 Million |
| • Employment Person Years | 90 per year averaged over the construction and operation period |
| • GDP Contribution | CAN \$5,750 per year |
| • Provincial and Local Tax Revenues | CAN \$1,176 per year |

The Draft Discussion Paper goes on to indicate that the small IPP industry can lead to many positive social and community development impacts in small communities throughout British Columbia. There is no question that sooner rather than later, IPPs will enter the power market in Namibia. Electricity demand and Gross National Product (GNP) have a strong correlation; the more developed the economy greater the level of correlation. Similarly, the relationship between increase in energy use and corresponding increase in productivity offers a good measure of the economic benefits of increased availability of reliable and affordable energy. To foster increased productivity and development in Namibia, policy should stimulate increased efficiency of electricity use.

EXHIBIT 7-1: POTENTIAL DEVELOPMENT IMPACTS OF THE IPP AND INVESTMENT MARKET FRAMEWORK TECHNICAL ASSISTANCE TO THE ELECTRICITY CONTROL BOARD OF NAMIBIA

NO.	USTDA FUNDED GRANT ACTIVITY	TYPE OF DEVELOPMENT IMPACT	DESCRIPTION OF THE DEVELOPMENT IMPACTS
1.	Namibia IPP Investment and Market Framework Technical Assistance Phase II	Infrastructure Related Impacts	<p>The support provided under this Technical Assistance will result in energy sector reform and improved regulatory governance. A direct result of the grant will be to create an enabling environment for encouraging the entry of private investors into Namibia's power sector. As IPPs enter the Namibian market, there will be considerable impact on the infrastructure of the country. The direct and indirect infrastructure impacts will include the following:</p> <ul style="list-style-type: none"> • Construction of power plants, additional transmission lines, distribution lines, substations, and electricity delivery networks to endues customers • Additional construction of roads, housing, communities service entities, and industrial facilities • Regional infrastructure developments related to regional interconnections needed for power exchange and trading in the Region • Other site-specific infrastructure impacts such as water supply systems, institutional buildings, etc. • Environmental effects – air quality, water quality, land use, etc.
		Market Oriented Reform Impacts	<p>This TA will cause significant market-oriented impact on the power market both within Namibia and in the Southern Africa Region in terms of power trading. Currently, Namibia seems to be operating on the basis of a single buyer (SB) model. As more and more IPPs are constructed, Namibia may move to a multiple seller multiple buyer (MSMB) model. This will create market competition in generation and will lead to efficiency gains and cost reduction. In a competitive market, the consumer will be the</p>

NO.	USTDA FUNDED GRANT ACTIVITY	TYPE OF DEVELOPMENT IMPACT	DESCRIPTION OF THE DEVELOPMENT IMPACTS
			<p>ultimate beneficiary as the quality of service and supply will improve whereas the cost of service and thus the tariffs will go down.</p> <p>As a result of transparent market rules to be promulgated by the ECB, Namibia will also strengthen its position in the regional electricity market and will be a stronger and more effective player. Enhanced Security of power supply will lead to the overall energy security of the country, reduce its vulnerability to interruptible sources of supply, and lead to a more robust economy and a generally more peaceful society. Increased competition in the power generation sector will likely result in the following types of impacts on the sector as a whole:</p> <ul style="list-style-type: none"> • Increased sector efficiency • Improved prices • Better energy and resource utilization balance • Improved and increased industrial activity • Increased investments in the economy <p>Finally, increased diversity of prime movers in the power market will reduce Namibia's exposure to external price risks.</p>
		<p>Human Capacity Building Impacts</p>	<p>This TA included a number of workshops for not only ECB officials but also other energy sector stakeholders. Officials from NamPower, the Ministry of Mines and Energy, consumer associations, Regional Electricity distributors (REDs), industry associations, the NGO community, and other ministries in the Government participated in the various workshops on (i) Market Models, (ii) Regulatory Models, (iii) IPP Barriers and Mitigation Measures, (iv) Cost Allocation, Cross Subsidies, and Rate Design, and (v) various working sessions throughout the performance of the TA. These workshops served as mini on-the-job training sessions and the human capacity building effect is clearly evident in the sense that ECB, the enterprises, and the Government are moving forward with the specific recommendations of the TA. The officials from these entities have greater knowledge and enhanced skills in designing processes and procedures that will significantly strengthen the governance of the</p>

NO.	USTDA FUNDED GRANT ACTIVITY	TYPE OF DEVELOPMENT IMPACT	DESCRIPTION OF THE DEVELOPMENT IMPACTS
			<p>sector. Specific areas of human capacity building include the following:</p> <ul style="list-style-type: none"> • Energy sector policy reform • Regional energy pricing and world-class PPAs and IPP tendering process • A fair and transparent regulatory regime leading to greater market and investor confidence • Improved licensing procedures and contracts • Improved customer relations management by utilities • Fair market and trading rules • Improved overall sector planning and linkage with national economic development planning. <p>As new IPP projects are constructed, the developers will employ and train hundreds of new engineers and technicians resulting in additional capacity building.</p>
		<p>Technology Transfer and Productivity Enhancement Impacts</p>	<p>There will be considerable technology transfer impacts as a result of the implementation of modern electric power technology and systems that will be brought into Namibia by the IPPs. The introduction of new power generation technology will lead to overall power sector productivity enhancement as well. Specifically, technologies such as IGCC, Combined Cycle Gas, Cogeneration, wind power, etc., will not only diversify the generation mix but also result in substantial technology transfer and productivity enhancement.</p>
		<p>Other Development Impacts</p>	<p>Availability of reliable electricity will lead to considerable satellite industry and secondary development in the country. Also, availability of electricity to rural communities will lead to greater rural development and poverty alleviation.</p>

At a gross level, Namibia can expect the following types of direct impacts from the entry of IPPs in the country's power sector:

Impact of Independent Power Production of 1MW

1.	Primary Employment	4 Employees
2.	Secondary Employment	8 Employees
3.	Temporary Employment	10 Employees
4.	LT Line Construction	5 Kilometers
5.	GNP Added (Direct from IPP)	\$10,000 Per Year
6.	GNP Added (Indirect from Other Activities)	\$50,000 per Year

Note: These figures are indicative only and will vary widely depending upon individual country characteristics, technology, market factors, etc.

At a minimum, USTDA requires the development impacts to be characterized within the following broad categories of impacts:

- Infrastructure Related Impacts
- Market-Oriented Reform
- Human Capacity Building
- Technology Transfer and Productivity Enhancement
- Other Development Impacts

7.3 Findings, Conclusions, and Recommendations

The Environmental Management Act 2007 of Namibia provides ECB the basis for developing specific requirements for environmental impact assessment of any IPP project proposals that it receives. Under this TA, CORE has developed a comprehensive matrix for the evaluation of applications submitted by various project developers for the license issuance decision (See Annex 5 of this Report). This matrix also includes a detailed section on the requirements for environmental and development impact assessments of IPP project proposals.

To date the ECB has received 11 formal generation license applications. Under this TA, CORE assisted the ECB in the evaluation of all of these proposals by utilizing the above-mentioned matrix. The final project proposal evaluation results were submitted to ECB under a separate report. Based on the support provided under this TA, the ECB took the following decisions on the various IPP project applications:

- Three of the 11 applications were withdrawn by the applicants for unknown reasons
- Three project applications were rejected by the ECB for a variety of reasons including incomplete applications and the lack of viability of the proposed IPP projects
- ECB granted five generation licenses

In addition, ECB is awaiting a further 5 new generation license applications following their recommendations to the preliminary applications and potential new projects by NamPower. Many of the IPP projects are moving forward. Some of the active projects include:

- Additional 80MW generator at the Ruacana hydropower station (US\$45million),
- 600MW interconnector with Zambia (US\$400million, increased regional trade); and
- 50MW HFO emergency power station (US\$140million)

The total procurement cost for these three projects is roughly US\$585million.

Due to a projected doubling of electricity demand in the next 5 years (from 500 to 1000 MW) as a result of new mining projects especially uranium, additional power projects will be required to meet this demand. In addition Namibia is gearing itself to becoming a net exporter of electricity to take advantage of the current power supply crisis in the region.

Due to time constraints a full quantitative assessment of the developmental benefits for 500MW of additional power generation capacity could not be made. However, based on the development impacts for a 1 MW power plant as detailed in the TA 1, main report, section V, the following would be typical direct benefits for 500MW:

- Primary Employment 2000 employees
- Secondary Employment 4000 employees
- Temporary Employment 5000 employees
- GDP added US\$30million/per year

A big obstacle to fast-track movement of IPP projects in Namibia is that Namibia is currently operating without a National Integrated Resource Plan (NIRP). The cost of such a NIRP is estimated to be around US\$1million, which was too much to be covered by either the TA 1 or 2. In the absence of a NIRP, the ECB has been proceeding with an unsolicited licensing process due to the urgent need for new power supply whereas NamPower followed with a solicited bidding process for specific projects resulting in differences between ECB and NamPower, which led to delays in the negotiations of power purchase agreements. A NIRP would have made the method and responsibilities for the bidding process for specific new generation projects clear. In the current TA, CORE has developed an action plan and TORs for an NIRP. This was submitted to the ECB as Task 3 Report under this TA. ECB is investigating sources of funding (ECB, Government and grants). The ECB intends to complete a NIRP in 2009.

NamPower requires US\$1.25 billion funding for their proposed projects over the next 5 years. It should be noted that NamPower currently has net assets of US \$750million, from which the loans and equity injection for their current projects must still be subtracted when capitalized. Thus NamPower will not be able to execute these projects on their own; IPPs including equity injection from other investors will have to play a role.

The Task 1 and Task 4 Reports submitted by CORE separately (See Annex 1 and Annex 4 to this Report) provided preliminary development impacts of the 11 IPP project proposals submitted to ECB by various IPP developers. The Task 5 and Task 6 Combined Report (Annex 5 to this Report) provides the details of the methodology used by CORE to evaluate the development impact of IPP projects. Based on these, CORE recommends that ECB adapt a standard methodology for evaluating the development impacts of IPP projects. This standard methodology should be finalized based on coordination with relevant government agencies and

through a public comments process and posted on ECB's web site as a standard requirement of all IPP project applications.

8 TASK 7: IMPLEMENTATION PLAN FOR THE IPPS

This section provides a summary of Task 7 objectives, activities conducted under Task 7, and key findings/conclusions resulting from the work. CORE International submitted a copy of the Task 7 Final Report to the ECB, which was accepted by the ECB. A copy of the Task 7 Final Report submitted to the ECB is enclosed as Annex 6 to this Report.

8.1 Objectives of Task 7

The objectives of Task 7 required CORE to draft a Model IPP Project Implementation Plan that the ECB may include in all tender documents for IPP projects. The purpose of this Implementation Plan will also be for the ECB to use it as a fact sheet for all unsolicited IPP proposals.

This Model IPP Project Implementation Plan shall include the following:

- Project Financing Details – the type and timing of financing that will be available for project construction and start-up;
- Formalized Agreement for Fuel Supply – including prices and terms and conditions for fuel delivery;
- Project Implementation Schedule – a timeline and a completion date for the project, and
- Institutional Agreements – including a model PPA with the buyer of electricity.

An important requirement of Task 7 was for CORE to prepare the Model Implementation Plan in close coordination with the ECB.

While the ECB has issued some licenses to specific IPP projects none of the projects has so far reached financial closures. The IPP developers have been informed by the ECB of specific conditions to licenses with a time limit for responses. The IPP developers are working on developing the projects further and meeting the conditions required by ECB.

8.2 Activities Conducted Under Task 7

The IPP implementation issues were discussed between the ECB officials and CORE experts through the project starting from the very beginning. Given that NamPower will obviously be an important player in any IPP decisions in Namibia and will, in some cases, may propose IPP projects to ECB, the CORE Team facilitated a number of work sessions between the ECB and NamPower officials on a variety of IPP implementation issues and processes including the following key areas:

- IPP Application Submission Process and Requirements – Roles of various Parties
- Post Application Documentation and Review Process
- IPP Due Diligence Process and the Roles of Various Parties
- IPP Risk Identification and Allocation and the Roles of Various Parties
- IPP Project Implementation Issues

Throughout the project, the CORE Team conducted analyses, developed various documents, and facilitated work sessions among all key parties. The specific deliverables are included as part Task 1 to Task 4 reports and memoranda. Key aspects of IPP implementation issues are summarized in this report.

As Namibia moves to the implementation phase of its IPP program, several matters will need to be addressed in an operational manner. These issues, many of which were identified in Phase 1 of this activity, will establish an overall environment for IPPs that can be attractive or repelling, depending on the specific decisions that are taken.

As the downturn in world markets continues to impair the ability of the Southern African countries to finance power sector expansion out of current earnings, IPPs, based on some sort of debt structure, will be increasingly proposed. In addition, the wide swings in primary commodity prices have once again made clear the risks that are posed by responding to short term economics in power sector investment plans.

The IPP approval procedure that has been developed by CORE with ECB is characterized by sufficient flexibility such that it is applicable to both large and small projects, with a wide variety of fuels and prime mover technologies. Of paramount importance to the success of Namibia's IPP program is the ability of the two key institutions, ECB and NamPower, to work together constructively. For, in addition to the normal risks and obstacles facing IPP programs, it is sometimes possible, if unfortunate, for parties to work at cross-purposes.

Promoting institutional coherence and unity of purpose was the first major issue that was broached by CORE. Early in the project CORE's Project Director suggested a set of joint operating principles that would enable worthy projects to receive approvals and permits in a timely and appropriate manner. Various annexes included as part of the stand-alone Task 7 Report (See Annex 6) include (i) the agenda used for facilitating discussions between the ECB and NamPower, and (ii) a memorandum prepared by NamPower that was used for discussions facilitated by CORE International between the ECB and NamPower on the IPP Due Diligence Process. During the IPP discussion process NamPower submitted two papers to the ECB on (i) Guide for Independent Power Producers in Namibia and (ii) Incorporating IPPs into the Namibian ESI. The CORE Team reviewed these documents and provided specific comments that were discussed in workshops with ECB and NamPower officials. Task & Report includes a copy of comments provided by the CORE Team to facilitate the IPP due diligence and implementation process.

In addition, in order to formalize the process of discussions between the ECB and NamPower on all IPP issues, CORE proposed that a joint ECB-NamPower Working Group should be established under the authorities of the CEOs of the two organizations and charged with working collaboratively on IPP issues. CORE also prepared the Terms of Reference for the proposed Working Group. The Task 7 Report also includes a copy of the document submitted by CORE to the ECB.

The joint ECB-NamPower Working Group was established to ensure that the following cooperative activities would be implemented by the country's IPP program:

- Development of an IPP License Application Information Document
- Development of an IPP Licensing Application Review and Decision Process
- Development of an NIRP

- Development of a Transmission Grid Code
- Development of a Position Paper on the Optimum Market Model in Namibia
- Development of a Position Paper on both the Solicited and Unsolicited IPP Project Proposals

Of these six activities, CORE completed its tasks as included in the Terms of reference. The License Application Information Document, the License Application Review and Decision Process, a detailed outline of the NIRP, and the Transmission Grid Code have all been submitted to the RCB as deliverables under other tasks. Position papers on a market model for the country as well as the relative roles of solicited and unsolicited IPP projects have yet to be completed jointly by the ECB and NamPower based on information developed by CORE under this Phase II program.

Other issues that have received considerable attention include standardization of the economic and financial data, standardization of technical and environmental documentation and implementation of appropriate distinctions between and among different projects on the basis of size, fuel and other technical matters.

With the uncertainty that has been created by the current international financial and economic environment, it is entirely appropriate that ECB be able to document and replicate the financial claims of applicants. In the past it was common for project developers to use complex, opaque and non-standard financial and economic modeling to promote a particular project. This approach made it impossible to compare one project with another or even to assess what impact a project might have on tariffs.

The solution was the development of a standardized methodology and data format for economic and financial analysis, as undertaken in Tasks 1 and 4 of this project. CORE worked with the ECB to develop an evaluation methodology that could be adapted to a variety of potential projects and technologies, making each proposed project comparable with the others. The resulting economic and financial analysis model, transferred to ECB staff during Task 4,² enables the regulator to understand both the implicit and explicit assumptions of an applicant. This methodology was employed in the due diligence of several proposed IPPs, including coal, oil, gas, and wind power plants. In addition to the results provided through use of the model, the ECB was also able to develop a standard data template for economic and financial data, thereby improving the transparency and comparability of competing projects.

An important issue that has yet to be resolved is the ultimate market model under which IPPs will be developed in Namibia. Given the size of the country and its limited ability to absorb large projects, it is vital to get the market model “right.” With South Africa facing its own supply and financing difficulties in the power sector it is a given for Namibia that internal sources or trading arrangements with others will continue to provide bulk power to the country. To this end there has been increased interest in a market model that brings large customers, mostly from the mining sector, directly into the project offtake purchase agreements. Current attention is focused on whether and to what extent large electricity users can enhance the credit worthiness of a power purchase agreement. CORE has made specific recommendations on this matter in its earlier work, and there remains a need for a focused follow-up and decision memorandum.

² And described in the report, “Task 4 Report - Namibia IPP Project II 2008,” September 2008.

The role of the ECB staff in IPP approvals is the remaining major issue that was resolved during this consultancy. In the past NamPower and ECB would carry on negotiations and applications in parallel tracks. A project developer could, in effect, shop for a sympathetic forum, the one more likely to approve his application. This project has sharply reduced the ability of project developers to shop their projects to different parties within Namibia, improving the reputation of the country as a business-like and business-friendly destination for investment.

In a generic sense an IPP program can work if the commercial requirements of the developers and lenders are congruent with the procedural elements of the regulatory and offtake purchase entities. The regulator and offtake purchase (NamPower) can operate in a manner that is consistent with reasonable business and finance practices if they understand the work that needs to be done and design application, approval, negotiation and contracting systems that are capable of achieving each objective.

The elements of an IPP project that must be included in the regulatory approval process can assist in the identification and quantification of risk, thereby making mitigation of that risk easier and more transparent. In work products submitted to the ECB for this phase of the IPP work, CORE has provided the ECB with a number of general descriptions of the risk identification process for IPPs. These descriptions carry with them an implicit requirement to then fill in data sheets and project descriptions so as to further the due diligence activities of the regulator. CORE has provided the ECB with data templates as well as a general description of the risk identification, mitigation and allocation processes. The materials provided to the ECB include detailed memoranda³ on the relationships of the various project agreements and the risks they are intended to mitigate, detailed descriptions of the contents of power purchase agreements, fuel supply agreements and other key project documents, and a training session on specific regulatory risks that must be accommodated by Namibia's IPP program.⁴

Since the CORE project is designed to work through the regulator, the ECB, our efforts are reflected primarily in what is done by that body. At the same time, NamPower is the offtake purchaser, particularly for the larger IPP projects, and it will bear most of the risk. Consequently, the IPP procedures designed by CORE for the ECB were created within an overall context of the project cycle and risk allocation.

In the initial TDA-funded project, Phase I of the current study, CORE concluded that key risks external to the ECB came from the following sources:

1. Pass-throughs of high generation costs by IPPs;
2. Low power prices in South Africa;
3. Difficulty in selling excess electrical energy to South Africa due to that country's low prices
4. Implicit risk for the Government of Namibia due to NamPower's status as the sole offtake purchaser of electricity; and
5. Continuing uncertainty regarding the structure of the domestic market arrangements in Namibia.

³ See the Project Memorandum, "DH Negotiation Guidelines Task 1," October 2008

⁴ See the project documents, "ECB IPP Risk Allocation," and "ECB NIRP Module 4 Reg Risk," October 2008.

In the past 12-18 months there has been a resolution, of sorts, for each of the issues listed in the earlier report: (i) the pass-through issue has been resolved by instituting specific requirements for pricing methodology by IPP applicants; (ii) Eskom has raised prices significantly; (iii) South Africa is moving toward a more decentralized marketing structure for its power sector; (iv) NamPower is considering participation in the offtake purchase agreement by some large users; and (v) Some form of modified Single Buyer model will remain in force for Namibia indefinitely.

By promoting improved ECB/NamPower coordination on IPPs, CORE International has been involved with an ongoing effort to allocate the functions and tasks that must be completed in order to have an operational IPP program. NamPower has constructed an elaborate risk evaluation methodology⁵ and CORE believes generally that this methodology captures the important and essential risks of an IPP program. CORE has also weighed in on the subject of risk allocation with training modules and presentations on the allocation of risk between and among various parties for project proposals that are specific to Namibia.

Having addressed the allocation of risk and having agreed to general parameters of pricing, it is then the duty of the consultants to recommend specific steps in an IPP approval process that can be implemented and institutionalized at ECB and at NamPower. The specific activities will be described in the following section. However, the general requirements for ECB are as follows. ECB should:

1. Follow a consistent application process
2. Provide model documentation for applicants
3. Specify the format, content and timeliness of technical, environmental, financial and economic information used in the application evaluation
4. Make clear to applicants that pricing adjustments will follow general pricing adjustment timing and format of ECB's regulation of NamPower
5. Have at its disposal a tool for conducting financial and economic due diligence on applications.

The application format (point 3), developed iteratively by ECB and the CORE Team, resulted in specific requirements for bidders with regard to the types of information that they furnish to the ECB. This information is detailed in a series of documents and reports published by this project and by the ECB. For example, technical, financial and economic information is specified in a CORE memorandum to the ECB that has been published as a "Technical Review Information Request" (May 2008). This publication lists the specific information that each applicant must furnish – capacity and output in standard international units, description of fuel and fuel supply characteristics, key cost and pricing parameters, again with the units and format circumscribed. More detailed data requirements are then set forth in the application sections on the plant, technology, fuel supply, costs and pricing. In this way the ECB can assess the readiness of each applicant to quantify the project risks to the greatest extent feasible. Such a complete identification and quantification of project risks goes far toward constructive resolution and mitigation efforts for key project risks. By specifying the nature and method of pricing adjustments (i.e., consistent with standard adjustment intervals for other regulated entities, including NamPower) the ECB has reduced the previous practice of ornamenting a financial analysis with exotic pricing escalations.

⁵ See NamPower, Due Diligence and Risk Assessment Framework, August 2008.

Indeed, one of the original due diligence tasks for which the economic and financial analysis model was used was to “reverse engineer” the pricing, output and financial assumptions in various applications.

8.2.1 Model IPP Project Implementation Plan

This section addresses the main issue under Task 7 – a Model IPP Implementation Plan. CORE conducted extensive research on the model IPP implementations used in other countries in order to define the most applicable model for Namibia. An example of the process used by many countries for industry participation is provided in Annex VI of Task 7 Report. It should be noted that one of the key functions of the governments is to ensure that the proposed IPP will have positive impacts on national and regional economic development in the country. The Task 7 Report submitted separately and included as Annex 6 discusses many key activities that have been discussed with the ECB on the need for evaluating IPP proposals with respect to their overall economic impact on Namibia.

8.2.2 Model IPP Implementation Plan

This section provides the IPP Implementation Plan that has been jointly developed between the ECB officials and the CORE Team with input from NamPower at strategic points throughout the activities carried out under this project. Exhibit 8-1 displays an IPP Project Implementation Plan that has been developed jointly by the ECB and the CORE Team. In the last column of the exhibit, references are made to specific documents prepared and submitted to the ECB separately throughout the project. It should be noted that given the details required for the IPP implementation process well beyond the Terms of Reference for this project, ECB issued a separate and parallel contract to CORE for developing details on the IPP Review Process. CORE submitted a detailed document to the ECB under this parallel contract and the references in the last column are from that report.

8.2.3 Model Tender Document and PPA for Small Scale IPP Projects

The guidelines for tenders for small-scale IPPs have been developed by the ECB as part of its process for IPP applications. What these guidelines do not include are specific instructions for a power purchase agreement (PPA) to be submitted by the IPP applicant. ECB has already seen that there is considerable interest from the IPP community in developing wind power projects in Namibia. In addition, NamPower has recently begun discussions with a wind IPP developer to submit a more formal application to the ECB. In this regard, it may be useful for the ECB to publish detailed standard guidelines for PPAs to be submitted as part of the applications.

This material was discussed extensively during the Phase I project with the ECB. The best example for a model PPA for small IPPs is the recent wind-based IPP projects in Sri Lanka. Currently, Sri Lanka has issued licenses for three wind IPPs totaling 34 MW. All three project developers submitted PPAs in accordance with the PPA guidelines and format provided by the Electricity Regulatory Board of Sri Lanka. A copy of these guidelines and format is enclosed as Annex VII of the Task 7 Report even though this was submitted as an Annex as part of the Final Report under the Phase I effort.

It is recommended that ECB and NamPower jointly review this PPA format and standardize the format for all future small-scale IPP proposals. Recent discussions

with the Sri Lankan Government confirm that the issuance of the standard PPA guidelines as part of the tender was most useful to the Sri Lankan regulator in comparing various project proposals on a common set of PPA criteria. This also assisted the regulator in its negotiations with the IPPs as part of the licensing decision process.

**EXHIBIT 8-1: IPP PROJECT IMPLEMENTATION PLAN AND ROLES OF KEY PARTIES
 ELECTRICITY CONTROL BOARD, NAMIBIA**

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES		
Phase I: IPP Pre-Application Requirements and Process				
	IPP Applicant	ECB	Other Entities	
1. Publish Application Requirements and Periodically Update them	ECB has received many applications from IPP developers who have generally followed the requirements. However, many of the applications were incomplete.	ECB has published and updated the Applications Requirements (Annex III) on its web site consistent with the Electricity Act (Annex I) and ECB Administrative Regulations (Annex II).	NamPower and the members of the broader stakeholder community have provided comments on the application requirements, which have been considered by the ECB.	
2. Public Notice of Potential IPP Project	ECB has received some unsolicited proposals.	It is ECB's function to issue a Public Notice for any new IPP project while accepted unsolicited proposals as well.	NamPower has also received some unsolicited proposals that should be diverted to the ECB at the appropriate time for decision making.	
3. Documentation of the Application	ECB plans to post the documentation format on its web site so that applicants can offer any comments.	Annex IV provides ECB's format for the documentation of the applications.	Third parties may offer comments to the ECB through the normal public comment process.	
4. Security of Application Data and Chain of Custody to Protect Proprietary Information		ECB also uses a proper "chain of custody" for the applications that are kept under lock and key.		
5. Communications Between	The applicant may submit any	ECB typically sets time limits and		

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
the ECB and the Applicant on Clarifications and/or Additional Information	follow-up supplementary information or any questions to ECB.	deadlines beyond which new information may not be accepted. ECB may, at its sole discretion, approach any IPP applicant for any additional information or clarification.	
6. Allowing Public Review of the Application		ECB uses a third party as a custodian of the applications for review by the public. This information is posted on ECB's web site.	
7. Public Comment/Objection Period		Annex V provides a format for a public objection to an IPP application, which is made available for public review after taking out proprietary and sensitive information.	
8. Opportunity to the Applicant to Respond to Public Comments	An applicant may respond to any comments or objection from the public and submit such responses to the ECB,	ECB's procedures allow for ECB to take into consideration any public comments and responses from the applicant at any time during the closing date of comments.	
9. Recording of the Completion of the Application and Notification to the Applicant		ECB has a standard format it uses to conduct an initial documentation and screening of the applications and send a letter to the applicant to notify the applicant of the receipt of the application and any obvious omissions in the application by the applicant.	

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
Phase II: IPP Project Application Review and Decision-Making Process			
	IPP Applicant	ECB	Other Entities
1. Formation of an IPP Application Review Committee and Terms of Reference for the Committee	Once the application process is closed, the applicant should not contact the ECB or submit additional information as it may disrupt the review process.	Annex VI a template for the preliminary review of the IPP applications. ECB has posted this template on its web site to inform the applicants of the review process. Annex VII provides a template for the ECB to seek further clarification from the applicant if the Review Committee deems it appropriate to do so.	
2. Review of the Description of the Project	The applicant must submit a detailed description of the project.	Annex VIII provides a template for the Technical Review Summary that was developed as part of this project under Task 1 and refined under Task 4.	ECB may involve outside parties including NamPower for the technical review if it determines that there would be no conflict of interest in doing so.
3. Technical Analysis of the Project	The applicant must submit all technical parameters for the proposed project.	This part of the review is focused on assessing the technical feasibility of the proposed IPP project as submitted by the applicant	ECB may involve outside parties including NamPower for the technical review if it determines that there would be no conflict of interest in doing so.
4. Economic & Financial Analysis of the Project	The applicant must furnish accurate & complete	The review Committee of ECB performs economic (national) &	ECB to share analysis results with NamPower for projects

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
	information as specified in license application –provide own economic & financial analysis.	financial (project) analysis including an assessment of the quality of data and provides judgment as to the quality of results, and soundness of the results.	where utility is involved; fiscal aspects of project examined by Ministry of Finance (if appropriate)
5. Tariff & Price Analysis	The applicant must submit expectations with regard to tariffs in financial analysis model	Assess tariff requirements for adequate return; determine whether project is “reasonable” with regard to tariff impacts; discuss adjustment mechanisms with applicant for PPA; ECB can reject project if tariff impacts determined to be unacceptable	NamPower to weigh in on tariff impacts and transmission agreement
6. Status of Power Purchase Agreement (PPA)	In order for the project to receive serious consideration, the applicant should submit at least a preliminary PPA.	ECB should review the PPA design and the assumptions for clarity, accuracy, and reasonableness. Specific deficiencies in the PPA should be documented for later communication to the applicant.	NamPower may be asked by ECB to provide advice on the PPA on IPPs that it not involved in as an applicant. On IPP projects where NamPower is involved as an applicant, ECB may ask clarifications as it would for any other IPP applicant.
7. Status of Various Other Project Agreements	In accordance with the application requirements, the applicant must provide the required information. However, the applicant may want to provide additional agreements as listed in this section in order to demonstrate the seriousness and soundness of the proposed	ECB may take into consideration any additional information provided by the applicant beyond that required as part of the application requirements guidelines.	NamPower may be consulted by the ECB on a case-by-case basis for comments and suggestions.
<ul style="list-style-type: none"> - Fuel Supply Agreement - O&M Agreement - Land-use Agreements/Permits - Other State and Local Permits 			

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
<ul style="list-style-type: none"> - Import Licenses - Any Special Agreements 	<p>project.</p>		
8. Environmental Assessment of the Project	<p>The applicant must abide by the application requirements guidelines,</p>	<p>ECB should conduct a technical review of the information submitted.</p> <p>CORE has provided typical requirements in this area as part of its Task 5 and task 6 combined report under this project.</p>	<p>ECB may use external parties to advise in this area.</p>
9. Development Impact Assessment of the Proposed Project	<p>The applicant must include at least a preliminary assessment of the development impacts such as jobs, market reform, economic growth, etc.</p>	<p>ECB should conduct a technical review of the information submitted.</p> <p>CORE has provided typical requirements in this area as part of its Task 5 and task 6 combined report under this project.</p>	<p>ECB may use external parties to advise in this area.</p>
10. Financial Information on the Applicant	<p>The applicant must submit Financial Statements, Tax Returns, Financial Declaration, Certificate of Good Standing, and any Other Financial Information</p>	<p>ECB should review this information in order to assess the financial capacity and soundness of the applicant.</p>	<p>ECB may contact outside parties to gather additional information to assess the financial soundness of the applicant. Any information received from outside sources should be documented.</p>
11. Project Cost Estimate – Methodology and Soundness of the Cost Estimates	<p>The applicant must submit project cost estimates consistent with the technical parameters of the project and define the methodology used for developing the cost</p>	<p>ECB should review this information in order to assess the financial viability of the project, specifically the FIRR proposed by the applicant.</p>	

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
	estimates		
12. Project Financing Plan	The applicant should present a preliminary project financing plan including any LOIs from prospective investors and banks.	ECB should review this information in order to assess the likely of the project being financed if the applicant is issued a license.	
13. Project Risks and Potential Liabilities	The applicant should identify and discuss all risks of the project and how the risks will be allocated.	ECB should evaluate these risks and their magnitude and assess whether the risks are allocated fairly and are consistent with internationally accepted principles.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
14. Local Partner(s) Involvement	The applicant should list any local partners who may be involved in the project with their proposed role.	ECB should check the local partners' background to see if they will really be involved.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
15. Project Implementation Schedule	The applicant should submit a preliminary project implementation schedule.	ECB should evaluate the schedule in terms of reasonableness and the national priorities in Namibia.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
16. Conditions of Performance Required of the Government of Namibia	The applicant should clearly state any requirements of the Government of Namibia.	ECB should evaluate these requirements and conditions to ensure that they are consistent with Namibian law and they are conditions that the GoN can meet.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
17. Contingency Plans	The applicant should propose any project contingencies and plans.	ECB should evaluate these contingencies to ensure that they are reasonable and can be allowed.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
18. Final Decision on the IPP Application		Based on the evaluation, ECB should make the most appropriate decision on the disposition of the application.	

IPP PROJECT PHASES	IMPLEMENTATION ACTIVITIES	
-		ECB's decision may be - Rejection of Application - Award of a Conditional License - Award of a Free and Clear License with Specific Project Implementation Milestones
Note: The entire review should be recorded in the format provided in Annex VIII, developed for the ECB under Task 1 of this project.		
19. Notification to the ECB Board		ECB should submit its recommendation to the ECB Board (See Annex IX) for the format)
20. Notification to the Minister of Mines and Energy		ECB should first notify the decision to the Minister, Ministry of Mines and Energy. (See Annex X for the format).
21. Notification to the Applicant		Next ECB should advise the applicant of the Government's decision on the application. If the application is approved, the applicant should be notified of the award of a license (See Annex XI for the template).
22. Managing the Process of Any Disputes by the Applicant of the ECB Decisions	The applicant may dispute the decision of the ECB on its application. The applicant should so notify ECB of its objections.	Annex XII includes the template for the objection. ECB should address the objections based on the type of objection or dispute in accordance with the

IPP PROJECT PHASES		IMPLEMENTATION ACTIVITIES	
		Namibian laws.	
Phase III: Post-License Decision Project Implementation Process			
		IPP Applicant	ECB
		Other Entities	
1. Project Implementation Schedule	Once a license is issued, it is the applicant's responsibility to abide by all requirements of the license including the project implementation schedule.	ECB should require the applicant to periodically report on the project implementation progress, especially the project schedule.	
2. Construction Schedule	It is the applicant legal responsibility under the license.	ECB may require the applicant to provide periodic reports on the construction schedule.	
3. Any Changes in the Project Design and Technology	If the applicant wishes to make any changes in the project it should submit a written request to the ECB for approval. The applicant should discuss the impacts of the proposed changes.	ECB may determine that the changes are not substantive and, therefore, can be approved under the same license. Alternatively, ECB may determine that the proposed changes require the cancellation of the existing license and consideration of a new license.	On projects where NamPower is not a direct party, ECB may wish to consult NamPower in this area.
4. Periodic Review of the Progress of Project Implementation		ECB should conduct a periodic review of the project.	ECB may use external support for this review.
5. Review of Compliance by the Applicant with All Conditions of License		It is the ECB's obligation to ensure that the licensee complies with all conditions of the license.	ECB may use external support for this review.
6. Final Investment Decision and Stages of Investments	It is the applicant's responsibility to ensure that	It is the ECB's obligation to ensure that the licensee complies with all	

IPP PROJECT PHASES	IMPLEMENTATION ACTIVITIES	
	sufficient funding is available for the project throughout the project construction phase.	conditions of the license.
7. Schedule of Permit Issuance for All Required Permits	It is the applicant's responsibility to ensure that all required permits are obtained expeditiously without unduly impacting the project schedule.	It is the ECB's obligation to ensure that the licensee complies with all conditions of the license.
8. Any Changes or Renegotiations of the Approved PPA	The applicant may propose changes to the PPA at any time.	ECB should review the changes to determine their impact on the project and the consumers. ECB may allow such changes or may reject them.

8.3 Findings, Conclusions, and Recommendations

CORE makes the following specific recommendations to ECB for putting the IPP project implementation on a more sound footing:

8. Based on the IPP Process Document developed by CORE under a parallel contract with ECB, it is recommended that ECB should review the applications requirements posted on its web site and make any necessary revisions on a regular basis.
9. In addition, templates for all aspects of the IPP application review and decision-making should be posted on the ECB web site in order to enhance transparency of the review process.
10. The procedure for public review and comment should be revised to provide public prompt access to any IPP applications and this procedure, when finalized, should also be posted on the ECB web site.
11. ECB and NamPower should formalize the process of establishing the proposed ECB-NamPower IPP Working Group. This Group should be charged with a specific mandate in the IPP implementation process in accordance with the Terms of Reference developed by CORE and included in this report.
12. ECB and NamPower should aim to reach agreements on standard formats, procedures, and roles in the following areas:
 - Risk Identification and Risk Allocation Principles and Approaches
 - A Standardized Tender Document for Small Scale IPPs
 - A Standardized PPA Process and a Generic PPA for Large Projects
 - A Standardized PPA for Small Scale IPPs
13. Namibia currently does not have an NIRP. As part of Task 3 under this project, the CORE Team developed and submitted detailed Terms of Reference to the ECB for an NIRP. CORE also recommended that the NIRP should be developed by an independent party and not by utilities or any potential participants in the power market.
14. The Government of Namibia needs to adopt a formal power market model, as the market participants and IPP developers must understand the Government's policy with respect to the market model in order for them to submit proposals consistent with the market rules. In addition, as Namibia is a trader in the Southern African Power Pool, an established market model will help strengthen Namibia's role as a power trading partner in the region.

In addition to these two major activities, it is also recommended that the ECB and NamPower formalize a Working Group along the lines of the Terms of Reference developed by CORE and discussed with both parties.

Also, while the ECB has instituted a public consultation process on IPP applications, it may be useful to formalize this process further. One of the best examples of the process for stakeholder participation in the IPP process widely used by many

countries was developed by the California Energy Commission (CEC) to guide its IPP industry for past two decades. Annex IV of the Task 7 Report includes a document that could be very useful to the ECB as it formalizes its stakeholder participation process in the development and licensing of IPP projects.

9 ADDITIONAL USTDA MANDATORY REQUIREMENT IN THE FINAL REPORT

USTDA requires that the Consultant selected to carry out studies funded by the USTDA provide a list of U.S. manufacturers and service providers in the subject area of the study.

In accordance with this requirement, therefore, Annex 7 includes a list of potential U.S. sources for equipment and services for power sector projects. The list of companies included in Annex 7 is by no means complete and given the volatility of the power sector some of the firms may have merged with other firms or may be operating under a different name.

The inclusion of a company's name in this annex is not an endorsement of that firm by CORE International. Similarly, the exclusion of an otherwise highly competent firm is in no way a reflection of the capabilities and quality of products and services provided by that firm.

ANNEX 1: Task 1 Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 1 Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 2: Task 2 Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 2 Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 3: Task 3 Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 3 Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 4: Task 4 Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 4 Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 5: Task 5 and Task 6 Combined Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 5 and 6 Combined Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 6: Task 7 Report Submitted to the ECB

In accordance with CORE's contract with the ECB and the intermediate milestone deliverables required under the contract, CORE International submitted a separate Task 7 Report. Some of the appendices in the report may have blank spaces or text in a different color. This is intentional as a lot of the material in some of the appendices was used as working documents for capacity building and training of the ECB officials.

ANNEX 7: List of Potential Power Sector Equipment and Services Providers in the U.S.

In accordance with the requirements of USTDA grant-funded contracts, this annex includes a list of potential sources for equipment and services for power sector projects in the U.S. The list of companies included here is by no means complete and given the volatility of the power sector some of the firms may have merged with other firms or may be operating under a different name.

The inclusion of a company's name in this annex is not an endorsement of that firm by CORE International. Similarly, the exclusion of an otherwise highly competent firm is in no way a reflection of the capabilities and quality of products and services provided by that firm.