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Consultants for Resources Evaluation

*Vinod K. Shrivastava  
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July 3, 2008

Mr. Siseho Simasiku  
Chief Executive Officer  
Electricity Control Board of Namibia  
8 Bismarck Street  
P.O. Box 2923  
Windhoek, Namibia

Cc: Mr. Gerrit Clarke: ECB Project managers for the USTDA Grant

**REFERENCE: Task 3: Technical Assistance to the Grantee in the Development of an  
Integrated Resource Plan (IRP) and the Distribution Grid Code**  
***IPP Investment Market Framework and Technical Assistance Phase II***

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Dear Mr. Simasiku:

We are pleased to enclose our Task 3 Report as required under the contract. Task 3 focuses on two key activities that are high priority for the ECB – (i) development of an Integrated resources Plan (IRP) and (ii) development of a distribution grid code.

On behalf of CORE International and the CORE Team I would like to express our very sincere appreciation to you and other ECB officials for supporting us as we progress on this study. We are especially grateful for the support that Mr. Clarke has provided us in getting the project off the ground.

On behalf of our Team, we wish to assure ECB of our continuing commitment to providing excellent services under this Project in a timely and efficient manner. Please do not hesitate to contact me if you need any additional information.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Vinod K. Shrivastava". The signature is fluid and cursive, written over a light blue horizontal line.

Vinod K. Shrivastava  
Corporate Project Director  
ECB Independent Power Producer Framework Project

cc: Donald Hertzmark, Team Leader



**NAMIBIA IPP AND INVESTMENT FRAMEWORK  
TECHNICAL ASSISTANCE  
UNDER A GRANT BY THE U.S. TRADE AND  
DEVELOPMENT AGENCY**

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

**PREPARED FOR  
ELECTRICITY CONTROL BOARD, NAMIBIA  
(INTERIM CONTRACTUAL REPORT)**

**PREPARED BY**

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**JULY 3, 2008**

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## **1. INTRODUCTION AND OBJECTIVES OF TASK 3**

### **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 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 to tackle 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 focuses on the provision of consulting services to ECB in the evaluation of IPP applications. ECB selected CORE International, Inc., an international management consulting company based in Washington, D.C., 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.

The Terms of Reference (TORs) for the USTDA Phase II Grant to ECB includes several tasks. Task 3 of the TOR focuses on providing assistance to the ECB in two key areas – (i) distribution

grid code and (ii) national integrated resources plan (NIRP). This report is a contractually required report for the activities conducted under Task 3.

## **1.2 TASK 3 OBJECTIVES**

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.

This report summarizes the activities completed by CORE International in fulfillment of the requirements of Task 3.

## **2. KEY TASK 3 ACTIVITIES**

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.

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

### **2.1 SUBTASK 3.1**

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

As part of this subtask, the CORE Team worked with ECB managers and staff on further refining the entire process for the development of the NIRP. Annex I provides a detailed scope of work for the NIRP and a budget estimate to finance the cost of developing the NIRP. At the request of ECB, CORE is also assisting 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.

### **2.2 SUBTASK 3.2**

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 by the end of 2008 or early 2009.

Annex II includes CORE's final version of the proposed Distribution Grid Code for Namibia. In addition, CORE has also provided a CD-ROM, which contains several sample distribution grid codes developed by other regulators in the U.S. and Europe.

### **3. KEY FINDINGS AND CONCLUSIONS**

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 Electricity Act 2007, which is one of the most reformed Acts 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 will 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 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.



## **4. RECOMMENDATIONS**

The recommendations resulting from task 3 are obviously as follows:

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.

## **ANNEX 1: ACTION PLAN FOR THE NIRP**

Annex I follows.



## **ANNEX 2: DRAFT DISTRIBUTION GRID CODE**

Annex II follows.

