

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: AB2795

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| Project Name | Regional and Domestic Power Markets Development Project (Southern Africa Power Markets Program APL1-b) SIL (FY07) |
| Region | AFRICA |
| Sector | Power (100%) |
| Project ID | P097201 |
| Borrower(s) | DEMOCRATIC REPUBLIC OF CONGO |
| Implementing Agency | |
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| Environment Category | <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined) |
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1. Country and Sector Background

A. Regional Context

DRC has enormous hydropower potential, estimated at about 100,000 MW – or 13% of global hydropower potential. Much of this potential is located a single site, the Inga dam site on the Congo River, located 125 miles downriver from Kinshasa, with a potential capacity estimated at 44,000 MW. With energy resources on this scale, DRC has the potential to play a pivotal role in meeting the energy needs of neighboring countries and beyond. Today, the Inga site provides power both southward (notably to the Southern Africa Power Pool – the SAPP) and northward (to the Central African Power Pool – the CAPP). Power supplied from DRC will be a critical enabling factor for the development of a competitive power market in the sub-region, with reliable, low-cost power supporting industrial competitiveness, private sector investment and regional growth and development. As a consequence, DRC generally, and the Inga specifically are currently central to most discussions in southern and central Africa to developing hydropower resources on a regional basis.

NEPAD has designated the development of the Inga site as a priority under the regional development programs. As such, NEPAD, the AfDB and other institutions are actively involved in supporting the development of the Inga power potential in three distinct but interrelated stages: (i) in the short-term, the rehabilitation of the existing facilities, which operate at less than 40% of installed capacity; (ii) in the medium-term, the development of the Inga III site, with its 3,500 MW; and (iii) in the longer-term, the full development of the site, with its additional 35,000 MW (the “Grand Inga”) Project.

Reflecting its geographic position and the centrality of the Inga site, DRC is a member of both the Southern Africa Power Pool (SAPP) and the Central African Power Pool. Currently, DRC's state electricity utility, la Société Nationale d'Electricité (SNEL), has long-term bilateral contracts for peak supply of 110 MW to South Africa and 100MW in Zimbabwe at a cost of about \$0.015/kwh. These sales generate valuable foreign exchange revenues for DRC. For its regional neighbors to the south, DRC's power provides benefits that include a low-cost and low-carbon alternative to thermal generation capacity (especially for those countries, such as Zimbabwe, that have no low-cost, indigenous sources of electricity) and a diversified source of power for countries extensively reliant on domestic hydropower. Discussions are currently underway about linking Zambia to Tanzania, thereby providing a route for DRC's power to also supply countries in eastern Africa.

With excess generation capacity in the region forecast to diminish, DRC's hydropower potential (and specifically the resources available at Inga) will play an increasingly central role in the successful further development of the SAPP. SAPP members have drawn up an 'Integrated Regional Power Master Plan' of high priority Projects, backed at political level by both SADC and NEPAD. Electricity supplied by DRC will be pivotal to some of these Projects. These Projects will allow Inga to supply significantly more power to the SAPP member countries, both through increased sales to existing customers and to new off-takers. SNEL has had discussions with SAPP members to more than double exports, to about 500 MW from the current 220 MW.

In summary, DRC generally, and Inga specifically, lie in many respects at the center of gravity of discussions on regional power in Sub-Saharan Africa. DRC, however, has not yet managed to capitalize on this opportunity. A range of Projects currently under commission or consideration will allow DRC and its neighbors, near and far, to tap the country's extraordinary hydropower potential, in particular from the Inga site. These efforts, however, necessarily begin with the rehabilitation of the existing Inga site in two distinct ways: first, rehabilitating Inga provides incremental power to supply the SAPP and potentially the CAPP countries; second, larger scale development of the Inga site (such as Inga 3, which will require over \$4 billion in investment) will be throttled if DRC is unable to demonstrate its ability to ensure the operation of the existing Inga 1 and 2 facilities.

B. Country Context

The size of DRC's promise has, unfortunately, been matched by its failures. It is potentially one of Africa's richest economies, with extensive mineral, energy and natural resources. It is a potential dynamo for regional growth, with its large labor force and potential market size, extensive navigable inland waterways and land links to nine states. Yet hopes of tapping this rich potential have been repeatedly thwarted as the country failed to translate the country's assets into improved standards of living for the Congolese people.

Today, the country is embarking on systematic efforts to overcome the legacy of mismanagement and conflict. These efforts, however, will need to face a complex array of factors: the delicate democratic transition currently underway, the legacy of conflict, ongoing regional tensions, economic and social collapse, and virulent corruption.

C. Sector Issues

Despite the country's enormous power potential, DRC has managed neither to capitalize on the opportunity of significantly higher electricity exports across Africa nor to provide adequate energy services for the vast majority of its own population. Household access is now less than before the war, at

6.5 % of households, compared to the SSA average of 20%¹, leaving the country in the bottom 15 of SSA. Frequent blackouts hit even high priority parts of the network. Electricity consumption per head was 91kWh in 2002, down from 161 kWh in 1980. Traditional biomass fuel is now estimated to account for 86% of total energy use in the country, with diesel/oil at 8%, electricity shrinking to 4% and coal accounting for the remaining 2%.

The proximate cause of these very low energy access rates is the state of DRC's electricity infrastructure. All parts of the network deteriorated extensively in the 1990s, as a result of extensive theft as the security situation worsened (both of physical components and via financial embezzlement), direct conflict damage and, most importantly, a lack of maintenance and a dearth of replacement parts. Underlying all these factors is a weakening of the institutional capacity to maintain the system. In particular, SNEL, the vertically-integrated parastatal power utility that dominates the generation, transmission and distribution of energy in DRC, faces wide-ranging financial, management, governance and operational challenges.

Looking forward, the government has identified several priority objectives for revitalizing the electricity sector: (a) supporting local business needs and satisfying unmet domestic demand, thereby supporting economic recovery and growth; (b) stemming losses that negatively impact the sector's financial integrity; and (c) exporting electricity, to generate foreign exchange and improve the strategic positioning of DRC within a regional context.

2. Objectives

The development objectives of the Project are (a) to increase domestic consumption, notably in Kinshasa, and exports to the SAPP; and (b) improve the efficiency of SNEL.

3. Rationale for Bank Involvement

The proposed Project is consistent both: (a) on a regional level, with efforts of NEPAD and other organizations to promote low-cost regional power development; and (b) on a national level, with the Transitional Support Strategy for DRC (January 26, 2004) and the proposed new CAS (currently under discussion), notably the strategic element of infrastructure reconstruction, as well as increasing government revenues and improving living conditions in the critical Kinshasa urban area. Notwithstanding Bank support to the sector to date, DRC continues to require assistance to better exploit the potential at Inga 1 and 2. Bank support can help the Government to better develop this resource to serve the dual benefits of increased domestic consumption and increased export revenues, while also supporting the reform of SNEL designed to improve the financial sustainability and transparency of the sector.

4. Description

The Project consists of five components as follows:

- **Component 1: Generation (US\$224.8 million):** Rehabilitation of the hydroelectric facilities at Inga, including civil works on the intake canal to improve the water flow through the plant and

¹ Weighted by population, excluding South Africa

rehabilitation of turbines to increase the operational capacity of the Inga plant (1 and 2) from its current maximum of about 700 MW to about 1300 MW.

- Component 2: Transmission (US\$ 94.0 million): Construction of a 400 KV Inga-Kinshasa transmission line to complement the existing 220 KV line. The second line will complement the existing 220 kV Inga/Kinshasa transmission line, increasing the amount of power to be delivered to the Kinshasa distribution network. The line will relieve the current saturation of the existing line, thereby improving the security of transport of power from Inga to Kinshasa.
- Component 3: Distribution (US\$ 79.9 million): Expansion and strengthening the distribution system in Kinshasa, including the acquisition of low voltage cables and transformers, and the extension of the grid into currently un-electrified areas of Kinshasa and the connection in these areas of an aggregate of 50,000 new customers.
- Component 4: Capacity Building (US\$ 31.2 million): The component comprises two subcomponents:
 - Subcomponent A: Strengthening SNEL’s operational capabilities, notably in commercial activities, planning, dam safety and technical training. The component will also support implementation of a program to enhance governance within the utility specifically, and in the sector generally.
 - Subcomponent B: strengthening MoE’s capacity to develop sector reform and to support further development of the Inga site.
- Component 5: Project Execution (US\$ 34.7 million, including Project preparatory activities): Effective implementation of the Project works, in an environmentally and socially sound manner, including appointment of supervisory engineering consultants, environmental/social consultants, and the PFM Agent.

5. Financing

| | |
|--|--------|
| Source: | (\$m.) |
| BORROWER/RECIPIENT | 10 |
| INTERNATIONAL DEVELOPMENT ASSOCIATION | 295 |
| AFRICAN DEVELOPMENT BANK/OTHER SOURCES | 100 |
| EC: EUROPEAN INVESTMENT BANK | 94 |
| Total | 499 |

6. Implementation

The Project will primarily rehabilitate and expand the integrated power grid owned and operated by SNEL. Accordingly, the Project will be implemented by SNEL. The Project will rely on SNEL’s existing operational organization, which includes: (i) a department dedicated to maintaining and operating the facilities at Inga 1 and 2; (ii) a separate department is responsible for the transmission network, including the Inga/Kinshasa corridor targeted under the Project; (iii) a department responsible for the distribution network in Kinshasa; and (iv) a department responsible for commercial operations in the Kinshasa area. Project implementation will rely on these existing units.

MoE and SNEL have created a Project Coordination Unit (PCU) responsible for coordinating implementation of the Project. The Project Coordination Unit comprises staff from both SNEL and MoE, and is divided into two teams:

- (a) SNEL's Project Coordination Team, created within SNEL to provide coordination among the various SNEL departments under the Project and to ensure proper execution of the various administrative and other tasks associated with implementation of a donor financed operation (including support on procurement issues, coordinating activities among the various SNEL units and with MoE, and ensuring coordination with and among the various Project co-financiers), and
- (b) the MoE team, which draws from the MoE's CATE and is responsible for executing the capacity building components directed at MoE and for providing overall strategic direction of the Project.

Each team has a designated leader, and the PCU will operate under a director appointed by MoE with the approval of SNEL.

While SNEL possesses a moderate amount of procurement experience, its internal controls for financial management and procurement are considered too weak to confide these functions entirely to SNEL for a Project of this size and complexity. To substantially reduce the fiduciary risks, a Procurement and Financial Management (PFM) Agent will be engaged by MoE to carry out the procurement and financial management functions.

7. Sustainability

Several factors should support the sustainability of the Project over the medium term.

- First, the nature of the physical investments require limited subsequent ongoing maintenance or operating costs (i.e., hydropower requires limited costs as compared to diesel or other similar fuel generation).
- Second, the sustainability of any gains on the commercial side will be intertwined with a general improvement in SNEL's operations. In this regard, the SNEL governance program should help.
- Third, the project is expected to generate increased financial resources for SNEL, which should enable it to improve its maintenance operations.
- Fourth, there appears to be increased demand within DRC for reliable power services, thereby creating both constructive pressure on the utility, but also support within government, to improve SNEL's performance.

8. Lessons Learned from Past Operations in the Country/Sector

The major lessons from the Bank's prior experience are as follows:

- (a) First, the need to strengthen internal financial controls and revenue collection mechanisms to ensure that incremental revenues are generated from additional power generation and that these additional moneys finance sound increased expenditures in the power sector. Accordingly, the

Project includes a governance enhancement program to improve SNEL's financial management practices. In addition, the appointment of the PFM Agent will serve to strengthen the procurement and financial management with respect to the Project specifically.

- (b) Second, given the institutional weaknesses resulting in part from the conflict and post-conflict period, the need to limit the scope of actions in challenging post-conflict contexts. Accordingly, the Project attempts to focus on a limited set of discrete physical actions under a limited sector contracts (construction of a transmission line, rehabilitation of the Inga site, rehabilitation of Kinshasa's distribution system), rather than a broader more geographically dispersed set of actions.
- (c) Third, the importance of complementing physical investment with strengthened managerial actions, in particular targeted at reducing the non-technical and collection losses which can deprive utilities of the revenues needed to maintain the facilities financed under a Project. Accordingly, the physical components are complemented by a component designed to improve revenue collection.
- (d) Fourth, the need to balance power development that addresses export or large industrial clients with actions that benefit under-served households, and similarly the need to balance the latter with revenue generating activities. Accordingly, the Project includes both types of complementary activities.
- (e) Fifth, the importance of ensuring adequate technical management of capital investments, while promoting sustainability through the use of existing structure. Accordingly, the Project design focuses on activities in respect of which SNEL currently enjoys the technical capacity and relies on SNEL's existing technical divisions rather than on the creation of a special implementation unit.

9. Safeguard Policies (including public consultation)

| Safeguard Policies Triggered by the Project | Yes | No |
|---|-------------------------------------|-------------------------------------|
| Environmental Assessment (OP/BP 4.01) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Natural Habitats (OP/BP 4.04) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Pest Management (OP 4.09) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Cultural Property (OPN 11.03 , being revised as OP 4.11) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Involuntary Resettlement (OP/BP 4.12) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Indigenous Peoples (OP/BP 4.10) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Forests (OP/BP 4.36) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Safety of Dams (OP/BP 4.37) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Projects in Disputed Areas (OP/BP 7.60)* | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Projects on International Waterways (OP/BP 7.50) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

* By supporting the proposed Project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

10. List of Factual Technical Documents

1. Feasibility Study, dated January 2007, prepared by Fichtner Engineering.
2. Environmental and Social Impact Assessment, and related documents, prepared by SOFRECO, dated December 2006

11. Contact point

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