Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 15-Sep-2023 | Report No: PID220

BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies)	Operation ID	Operation Name	
Congo, Republic of	P501343	Strengthening Electricity Services Project	
Region	Estimated Appraisal Date	Estimated Approval Date	Practice Area (Lead)
WESTERN AND CENTRAL AFRICA	08-Feb-2024	23-May-2024	Energy & Extractives
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing (IPF)	Congo, Republic of	Energie Electrique du Congo (E2C), Ministry of Energy and Hydraulics	

Proposed Development Objective(s)

To improve the quality and reliability of electricity service delivery, and improve the performance of the distribution and retail segment.

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	Yes
Is this project Private Capital Enabling (PCE)?	No

SUMMARY

Total Operation Cost	**80.00**
Total Financing	**80.00**
of which IBRD/IDA	**80.00**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	80.00

Environmental and Social Risk Classification	Concept Review Decision
Substantial	The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. The Republic of the Congo (RoC) is a lower middle-income country (LMIC) exposed to fluctuating oil revenues affecting the whole economy and income distribution. Located in the Western coast of central Africa, the country is highly endowed with natural resources, including natural gas and oil. Following the oil price shock of 2014-16, Government revenues slumped, and the economy plunged into a recession which was further exacerbated during the COVID-19 pandemic. The GDP per capita (constant LCU) declined sharply and was estimated in 2021 at 59% of its 2014 value.

2. Persistent inequalities and increase in poverty are sources of vulnerability for the RoC. The prosperity that the RoC enjoyed with the oil windfall did not trickle down to the entire population and the proportion of the population living below the international extreme poverty threshold of US$ 1.90 per person per day increased from 39% in 2015 to 54% in 2021. The country suffers from poor governance, weak institutions, and exclusionary divides along regional, urban, rural, and population group lines. There is a stark inequality between urban and rural areas in terms of access to services and opportunities: for example, while the urban electricity access rate stands at 50%, it barely reaches 13% in rural areas.

3. While the country's debt situation is improving, the RoC remains in debt distress placing an onus on reducing inefficient public subsidies. Public debt as a share of GDP fell to an estimated 94% of GDP at end-2022, driven by improved debt management, fiscal discipline, and higher oil revenues. While the debt is assessed as sustainable, the RoC remains in debt distress due to outstanding external arrears and remaining uncertainty about the magnitude of valid domestic arrears. Fuel subsidies stand at 2.4% of GDP, which is higher than the health sector for example. As part of its dialogue with the IMF, the RoC has increased fuel prices by more than 35% in 2023 (5% in January and 30% in July) and is expected to increase another 35% over the next 2 years. It is estimated that 1% of GDP goes to subsidies to the biggest electricity generation plant, the gas to power generation *Centrale Électrique du Congo* (CEC). [1]

Sectoral and Institutional Context

4. The power sector infrastructure in the Republic of Congo is insufficient and in poor shape. Two thirds of the 750 MW installed come from the Independent Power Producer (IPP) CEC, an inefficient open gas cycle gas power plant located in Pointe Noire. The rest of energy generated comes from the hydropower plants of Imboulou (120 MW installed and 85 MW available), Moukoukoulou (74 MW installed and 60 MW available), and Djoué (15 MW installed but no capacity available). The transmission network's backbone is the 440 km high voltage line going from Pointe Noire to Brazzaville, which is extremely unreliable. This is why the outages are considerably higher in Brazzaville.[2] This network is interconnected with the Democratic Republic of Congo (DRC) transmission network, which transfers its unstable operating

[1] Republic of Congo Economic Update, June 2023, Reforming Fossil Fuel Subsidies.
[2] In 2021, the country experienced 54 blackouts and 41 partial blackouts, of which 38 took place in Brazzaville and 3 in Pointe Noire.

conditions for the grid of the RoC.[3] The length of the medium voltage distribution network is close to 700 km, mainly concentrated around the two major urban consumption centers of Brazzaville and Pointe Noire. A significant part of the population relies on diesel self-generators given the unreliability of the electricity supply.

5. The Ministry of Energy and Hydraulics (MEH) defines the sector's strategy and oversees the sector actors. The utility *Energie Electrique du Congo* (E2C) operates as a natural monopoly for the transmission and distribution networks, as well as the hydropower plants. The gas power plants of CEC and Aksa Energy (50 MW gas to power plant) are privately owned. Two other relevant sector stakeholders are the electricity regulator ARSEL and the rural electrification agency ANER, both of which have limited capacity and mandates.

6. The operational, commercial, and financial performance of the sector and the utility E2C is poor. Total network losses were at 45% in 2022 - twice the average of sub-Saharan Africa (22%). The transmission and distribution infrastructure is extremely fragile because of systematic underinvestment and lack of proper maintenance over long periods of time. The ratio of customers per employee of E2C is the third highest in Africa (117). More than 40% of E2C's customers are billed on a flat rate basis or given electricity for free. In addition, the bill collection rate stands at a mere 73%. Electricity tariffs have remained unchanged since 1994, and they allow to recover only 56% of the cost-of-service delivery (US$ 0.09/kWh versus US$ 0.16/kWh). In addition, the tariff structure is highly regressive. As a result, E2C is highly indebted and has significant arrears with CEC.

7. The Government is implementing a structural reform of the electricity sector. The liberalization of the electricity sector was introduced two decades ago with the approval of law 14-2003. This law limits the role of the government to defining the sectoral policies, planning, and regulation. However, it delegates the operational activities to multiple public and private actors through PPPs. After a long period of lethargy, the 2017 Energy Sector Policy Strategy re-confirmed the 2003 agenda and re-created some momentum. An updated Energy Sector Policy Strategy is expected to be adopted by the government in the months to come. In 2018 the old vertically integrated utility *Société Nationale de l'Electricité* (SNE) was dissolved (law 22-2018) and E2C (now an asset management company) was created (decree 295-2018). As of today, E2C is still operating the all the electricity assets except for the two gas generation concessions. However, it is expected that substantial changes will take place soon on all electricity segments:

- **Generation**: the government signed concession agreements with the 3 main existing hydropower plants (Imboulou, Moukoukoulou, and Djoué) between May and July 2023. The negotiation of the power purchase agreements (PPAs) between E2C and the concessionaires is on-going.
- **Transmission**: the government is expected to approve in the weeks to come a decree creating a public transmission system operator (TS) - a *Gestionnaire de Réseau de Transport* (GRT) in French. These functions would then be taken out of E2C, although the latter will remain responsible for the transmission investments as it is the asset company.
- **Distribution**: the government is expected to approve in the weeks to come a decree to introduce an operations concessionaire to be responsible for the distribution and commercialization of electricity – following the *affermage* model. The decree will state that the private partner will be selected through an international competitive tendering process.[4] Once this contract is awarded, E2C would still be responsible for the investments in distribution as it is the asset company.

[3] 60% of the total 359 reported network incidents in 2021 originated in the DRC network.

[4] The approval of this decree is a prior action of the cross-sectoral DPO currently under preparation (P180093), expected to be submitted to the Bank's board in November 2023. The Bank team suggested to the government late 2022 to choose an operations concession rather than a full concession for the distribution segment given its poor state. The Minister led a delegation that visited Côte d'Ivoire in April 2023 to get a better understanding of the *affermage* experience in Côte d'Ivoire, which has been in place for three decades and is regarded as a success story in the continent.

8. The water and sanitation sector suffers from important infrastructure deficits, combined with poor performance of sector stakeholders and an alarming financial situation. Access to improved drinking water in urban areas has improved from 45% in 2011 to 85% in 2021. However, the national water utility's (*La Congolaise des Eaux*, LCDE) water distribution network is in an advanced state of disrepair and the quality of water supply services is very low. Non-revenue water (NRW) was estimated in 2022 to exceed 50% and the collection rate is close to 60%, leaving LCDE in a state of chronic financial deficit. Sector modernization efforts include the recent expansion of water production and distribution systems in Brazzaville, under AFD financing. LCDE is considering the construction of a water production facility at Gambouissi Lake in Pointe Noire together with the expansion of water services to 20,000 households, under possible IFC financing. Regarding sanitation, only 21% of households have access to a basic service, making RoC one of the worst performers in Africa. Even when basic sanitation exists, sludge management is problematic in the absence of functional institutional and regulatory framework, wastewater treatment capacity, and available services to safely collect and transport.

Relationship to CPF

9. The project is aligned with the World Bank Group Country Partnership Framework (CPF) for the Republic of Congo for FY20–24[5],the 2018 Systematic Country Diagnostic (SCD) and the 2023 Climate Change Development Report (CCDR). The CPF prioritizes increasing access to basic infrastructure services such electricity (Objective 1.5), and the project is aligned with the country's NDC target of reducing GHG emissions. The operation is also in line with the CCDR of 2023 which emphasized the importance of redressing the transmission and distribution sectors as a key condition for the energy transition towards hydropower and away from the current overreliance on gas-to-power. The Project continues the Bank's long-term engagement in support of the RoC's electricity sector, including through the Water, Electricity and Urban Development Project (P106975-PEEDU), approved in 2010 with an additional financing in 2014, which closed in June 2021.

10. This project is complemented by the preparation of a DPF series (P180093) and the mobilization of technical assistance. This project will complement the RoC's Second Fiscal Management and Inclusive Growth DPF (P180093, board expected in Q2 FY24), which includes a prior action the approval by the Council of Ministers of a decree to introduce the operations concessionaire to operate and maintain the electricity distribution network. Furthermore, the team is in talks with ESMAP to secure Trust Fund support to attach to this operation for: (i) Bank-Executed analytical studies to complement the operation, notably a distribution analysis to model tariff optimization and explore the impact of tariff changes on the population; and ii) Recipient-Executed pre-feasibility studies for potential hydropower projects in proximity to Brazzaville.

11. The project is being prepared in coordination with potential support actions from IFC and MIGA for hydropower development in RoC. The IFC is engaged in dialogue with the MEH to identify potential hydropower projects they could sponsor, and a key condition of any investment will be the redressal of the distribution sector. IFC is also exploring a potential support to the Imboulou hydropower concessionaire. Furthermore, MIGA has been approached by the Moukoulou hydropower concessionaire to explore the possibility of the provision of a guarantee.

12. The proposed Project is being prepared in coordination with other donors to complement their support to the RoC, most notably with the French Development Agency (AFD). The AFD approved a EUR 75 million project in 2015 to support investments in the transmission and distribution sector. This project was reduced to EUR 58 million in 2023 due to delays in implementation, owing to lack of ownership and slow procurement, and two critical investments for the sector were abandoned: (i) the rehabilitation of the transmission line between Loudima and Pointe Noire (US$ 9 million); and (ii) the rehabilitation of 2 substations along the Pointe Noire – Brazzaville transmission line (US$ 14 million). Given the importance of the investments and the fact that draft bidding packages have already been prepared, this project will fund

[5] World Bank. 2019. *Country Partnership Framework (CPF) for the Republic of Congo for the Period FY20–FY24.* Report No. 126962-CG. World Bank: Washington, DC.

these contracts. As far as other donors are concerned, the Japanese Development Agency (JICA) is considering preparing a grant to support critical investments of the sector, and the European Union (EU), African Development Bank (AFDB), and UN Development Programme (UNDP) are engaged in policy dialogue in the sector. The Bank is exploring the opportunity to revive a donor coordination platform.

C. Proposed Development Objective(s)

To improve the quality and reliability of electricity service delivery, and improve the performance of the distribution and retail segment.

Key Results (From PCN)

- Reduction in the duration of electricity service interruptions.
- Reduction in total losses across the electricity network.

D. Concept Description

13. The proposed project aims at creating a transformative dynamic in the electricity sector building on the reform momentum that the Government is bringing to the sector. The government has agreed to put its distribution and retail as well as its generation sectors under concession and is trying to create the foundations to attract private investment into new generation developments. The government is engaged with IFC and MIGA, which shows the potential for a one WBG approach of this intervention. The portfolio approach that the Bank is putting forward includes not only this IPF, but also support to the electricity sector through a multi-sectoral DPO series and mobilizing technical assistance. The activities of this project will fund critical investments of the sector that are needed to put the sector in a virtuous circle that leads to improved service delivery, efficiency, and financial sustainability. A Project Preparation Advance (PPA) will be mobilized to start preparing right away the activities presented below.

14. The project's investments will strengthen the quality and reliability of the transmission and distribution networks, and improve the performance of the distribution and retail segments. A financial envelope of US$ 100 million in urgent and specific activities has been identified by the MEH and the electricity utility E2C.[6] The allocations per component below are indicative and the final allocations will be agreed during the next phases of preparation. Among the significantly higher sector needs, these activities have been selected based on (i) its criticality to improve the network's performance; (ii) its readiness to reach contract signature in a reasonable timeframe; and (iii) the easiness of implementation from a safeguards perspective.

15. Component 1: Strengthening the reliability of the electricity ($ 40 to 50 million). The current situation of the high-voltage (220 and 110 kV) transmission infrastructure in the country is extremely fragile, because of systematic underinvestment over long periods of time, whose negative impacts have been exacerbated by insufficient financial resources to carry out systematic maintenance activities to maintain the serviceability of assets. This has resulted in unreliable transmission services, negatively affecting the quality of electricity supply to all consumers connected to the national grid. Furthermore, some core and very expensive assets of the existing transmission infrastructure are running

[6] Most of the identified investments come from the Urgency Plan for Improving Electricity Services (UPIES) in Brazzaville and Pointe Noire approved by the MEH an E2C in December 2021, which identifies a financial envelope of US$ 200 million emergency plan to redress the electricity sector. Due to the poor financial situation of the sector, the implementation of the UPIES has barely started.

under operating conditions that expose them to risk of damage. Urgent corrective actions are needed to address the current unsustainable situation. The Component is proposed to be structured as such:

- **Sub-component 1.1:** Construction and rehabilitation/upgrade of transmission substations**.**
- **Sub-component 1.2:** Rehabilitation of selected segments of the 220 kV line Pointe Noire – Brazzaville.
- **Sub-component 1.3:** Upgrade of the existing supervisory control and data acquisition (SCADA) system of the dispatch center.

16. Component 2: Improving the performance of the electricity distribution and retail segment (US$ 24 to 34 million). Due to the same reasons exposed in description of component 1, the current condition of the existing electricity distribution networks is mediocre, resulting in bad quality of electricity supply to consumers countrywide and high technical losses. The commercial performance of E2C is poor, with non-technical losses (amounts of energy consumed but not sold) exceeding 40% of the amounts of energy purchased. One of the factors contributing to this situation is that around 120,000 regular customers of the utility are not metered, and therefore billed based on estimates that may be significantly different from real consumption. This component will support the improvement of the operational performance of the distribution and retail segment by financing some actions with high-impact and cost-effectiveness. The Component is proposed to be structured as such:

- **Sub-component 2.1**: Rehabilitation, reinforcement and upgrade of the distribution network.
- **Sub-component 2.2**: Improving commercial performance or E2C.
- **Sub-component 2.3**: Reducing electricity generation by replacing around 10,000 public lighting luminaries in Brazzaville and Pointe Noire by high-efficiency LEDs.
- **Sub-component 2.4**: Incorporation of an Outage Management System (OMS).

17. Component 3: Technical Assistance and Project Implementation Support ($ 16 million). This Component will provide the necessary Technical Assistance and Project Implementation support to implement the project and accompany sector reforms. The Component is proposed to be structured as such:

- **Sub-component 3.1:** Consultancy services to improve sector performance.
- **Sub-component 3.2:** Institutional support to the Water and Sanitation sector.
- **Sub-component 3.3** Project implementation.

Corporate requirements

18. Maximising Finance for Development (MFD). The potential to mobilize private capital for hydropower rehabilitation and greenfield investments is significant – and IFC and MIGA are currently exploring specific avenues of support. This project will contribute to create the enabling conditions for these investments to materialize in two ways. First, it will support the introduction of an operations concessionaire for the distribution sector - through the financing of a transaction advisor and funding of a revenue protection program and the universalization of metered connections for E2C clients). Second, it will reduce both technical and non-technical losses, therefore diminishing the cost-of-service and improving the financial viability of the sector, which is a pre-requisite for the private sector to fund hydropower investments.

19. Gender. The RoC ranks 147th out of 170 in the 2021 Gender Inequality Index (GII). Women are employed primarily in the primary sector, and the 2019 ILO study indicate that the unemployment rate is higher among women (10.2%) than among men (9%). The project will explore how to address gender gaps in voice and agency, and/or economic empowerment.

20. Citizen engagement. To ensure effective citizen engagement, a number of approaches will be used including consultations, citizen feedback, Grievance Redress Mechanism (GRM), citizen-led monitoring, capacity building for citizen

engagement, and ICT. The GRM would be set up as a means to address complaints early on and manage risks in project preparation and implementation before they escalate. The project Stakeholder Engagement Plan will identify strategies for soliciting stakeholder feedback to engage citizens in the design, implementation and monitoring of prioritized works, thereby creating a constructive feedback loop.

21. Climate co-benefits. These include: (i) reduced CO_2 emissions through reduced power purchases stemming from reduced technical losses and consumer consumption behaviour changes following the metering campaign; (ii) the rehabilitation of existing transmission and distribution infrastructure improving the efficiency of the system; (iii) improved resilience of the electricity network to extreme weather events following rehabilitation and maintenance along with modern standards; (iv) adoption of low-carbon development pathways through activities under Component 3; (v) improved energy efficiency of public lighting; (vi) improved energy efficiency for the water utility; and (vii) reduced reliance of Pointe-Noire on groundwater resources vulnerable to saline intrusion and to cross-contamination from rudimentary sanitation facilities during flooding.

22. Paris Alignment: The proposed project is considered aligned with the Paris Agreement on both mitigation and adaptation. It is consistent with the country's 2021 Nationally Determined Contribution (NDC). Among key mitigation activities identified in 2021 NDC is the optimization of the energy distribution system. The proposed project will promote climate change mitigation by increasing the efficiency of the electricity infrastructure and reducing GHG emissions. All potential measures for mitigation and adaptation will be identified, assessed and properly reflected in project documents before appraisal. No specific risks with respect to the mitigation and adaptation aspects of the Paris Alignment Assessment are flagged at this stage. A risk screening will be conducted during project preparation.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

23. The overall risk rating of the project is Substantial. The rating is based on the eight risk categories summarized in the datasheet. The highest risks at this stage are: the institutional capacity for implementation, the fiduciary risk, and the environmental and social risk.

24. Institutional capacity for implementation and sustainability is rated Substantial. Implementation will involve the MEH as the primary implementing agency, as well as the national electricity utility (E2C) at national and local levels with different capacities and reporting lines. As a result of the on-going reform, E2C's organigramme will be split along asset management, transmission, and distribution – the latter operated by an operations concessionaire ("fermier").

25. Fiduciary risk is rated High: The project's overall fiduciary risk is considered high, with a high probability of adversely impacting the PDO, primarily due to the weak fiduciary environment of the country.

26. Environmental & social risks are rated Substantial: The potential environmental and social risks associated with rehabilitation of existing electricity transmission and distribution infrastructure are rated as substantial. The potential impacts are expected to be site-specific, short-term, and effectively mitigated, subject to implementation of proper E&S measures. Key potential *environmental impacts* include: (i) generation of solid, electrical and construction waste during rehabilitation works; (ii) generation of hazardous waste (PCBs) during replacement of old transformers; (iii) temporary disruptions of traffic and risk associated with transportation of construction materials; (iv) air, dust and noise pollution; and (v) Occupational health and safety risks of workers, including electrocution, falls, and thermal burn hazards. There can be potential community health and safety risks associated with electricity service disruptions, dust, noise, vibrations, hazardous waste, and movement of heavy vehicles and machinery. Concerning *social impacts*, some of the project's activities under component one might result in potential economic and physical displacement due to civil works although no construction of new transmission lines will be undertaken, and rehabilitation of transmission lines will only be undertaken along stretches of the grid where the risk of resettlement is low. It is also possible that project activities would result in labor risks due to labor influx, difficulty in conducting significant and inclusive stakeholder consultations in certain project areas, potential gender-based violence (GBV) risks and/or sexual exploitation and abuse (SEA), etc. There could be potential impacts on biodiversity during the rehabilitation of the existing TL; however these are expected to be limited to the construction phase. Biodiversity impacts will be assessed and appropriate mitigation measures will be included in E&S or biodiversity specific instruments.

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