Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)
# BASIC INFORMATION

## A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Project Name</th>
<th>Parent Project ID (if any)</th>
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</thead>
<tbody>
<tr>
<td>Africa</td>
<td>P168185</td>
<td>Cameroon - Chad Power Interconnection Project</td>
<td></td>
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</table>

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<thead>
<tr>
<th>Region</th>
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<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
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<td>16-Jun-2020</td>
<td>Energy &amp; Extractives</td>
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<table>
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<th>Borrower(s)</th>
<th>Implementing Agency</th>
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<tbody>
<tr>
<td>Investment Project Financing</td>
<td>Republic of Cameroon, Republic of Chad</td>
<td>SONATREL, SNE</td>
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### Proposed Development Objective(s)

The Project Development Objective is to: (i) interconnect the Southern and Northern power systems of Cameroon; (ii) to enable electricity trade between Cameroon and Chad; and (iii) increase access to electricity in Chad capital city of N’Djamena.

### Components

- Cameroon RIS-RIN Interconnection
- Cameroon-Chad Interconnection
- Electricity access in Chad

## PROJECT FINANCING DATA (US$, Millions)

### SUMMARY

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>Total Project Cost</td>
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<td>Total Financing</td>
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<tr>
<td>of which IBRD/IDA</td>
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<td>Financing Gap</td>
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### DETAILS

#### World Bank Group Financing

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<td>IDA Credit</td>
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The World Bank
Cameroon - Chad Power Interconnection Project (P168185)

IDA Grant                                      90.00

Non-World Bank Group Financing

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Environmental Assessment Category
A-Full Assessment

Decision
The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context
1. The proposed Project will connect the power systems of Cameroon and Chad, enabling electricity supply available in the South of Cameroon to reach the northern regions and energy-starved Chad, accommodating the needs of the millions of people in both countries who still lack access to electricity service. The Project consists of three components: (i) the interconnection of the southern (Reseau Interconnecte Sud – RIS) and northern (Reseau Interconnecte Nord – RIN) transmission systems in Cameroon (RIS-RIN Interconnection), which will enable further development of the abundant hydropower potential concentrated in the south to feed demand in the north and electricity exports to Chad; (ii) co-financing of the Cameroon – Chad Interconnection Project financed by the African Development Bank (AfDB) to connect the power systems of the two countries and enable power trade between them; and (iii) the reinforcement of Chad’s power network and electricity access expansion in an around N’Djamena. The Project will also finance a program to improve the operational and commercial performance of Chad’s national utility (Société Nationale d’Electricité – SNE), and therefore its credibility as off-taker of electricity imported from Cameroon. In 2017 AfDB approved a US$232 million financing for the cross-border interconnector but could reach effectiveness due to a financing gap of EUR41 million in Chad. Unable to bridge such gap due to its fragile macroeconomic situation, the Government of the Republic of Chad (GoRC) resorted to the World Bank for grant funding, which forms part for the proposed Project.

Country Context

Cameroon

2. Despite the country’s abundant natural resources and middle-income status, poverty remains widespread in Cameroon and the divide between the richer South and the poorer North feeds inequality and social tensions. With a surface of 475,400 km² and a population of 25.2 million people in 2018, Cameroon is a medium-sized country, endowed with vast natural resources include oil, gas, minerals, agricultural land and forests. While the GDP per capita of US$1,527
attests Cameroon’s lower-middle-income status, the country ranked 133rd out of 157 countries on the 2018 Human Capital Index (HCI). Poverty remains high and is concentrated in rural areas, where 90 percent of the poor live. Approximately 56 percent of the poor population, equal to 4.5 million Cameroonian, resides in the North of the country and poverty there has dramatically increased, while decreasing in the South. Cameroon’s health and education indicators are closer to those of low-income economies, and they also present deep regional and rural-urban disparities. The unemployment rate rose from 3.8 percent in 2007 to 4.3 percent in 2014. Moreover, Cameroon is increasingly vulnerable to instability and violence. Violence and attacks by the Boko Haram jihadist terrorist in Cameroon’s northern and far-northern regions have displaced nearly 230,000 people, and a secessionist conflict in the Anglophone south-western and north-western regions affects about 17 percent of the population; both pose an ongoing security threat and inhibit economic activity.

3. **Cameroon’s medium-term favorable growth outlook is expected to deteriorate because of COVID19 and continue focus on reforms and infrastructure investments will be key to propel a rebound.** Dependency on oil revenues has made Cameroon vulnerable to external shocks and weakened its macro-fiscal balance. Driven by endogenous factors, and notably the large public works in preparation for the 2021 Africa Cup of Nations, rising investment in the oil and gas sectors, higher levels of private consumption, and the strong performance of financial services, Cameroon’s GDP growth rate rose to 3.9 percent in 2019. Also, the continued focus on fiscal consolidation brought down the fiscal deficit from 6.1 of GDP in 2016 to 2.2 percent in 2018. The global slowdown associated with COVID19 is expected to reduce demand for Cameroon’s exports of oil and non-oil commodities, causing growth to ease to 3.1 percent in 2020. Also, the adverse effect of lower oil prices combined with continued pressures on security expenditure and the fiscal impact of the government response to the corona virus pandemic are expected to widen the overall fiscal deficit to 2.4 percent of GDP in 2020. To mitigate risks, further structural reforms are vital to improve the business environment, diversify the economy, and build resilience to external shocks. The increased clean electricity supply resulting from the large hydropower development will be a key growth driver. Measures to increase the productivity of food crops, and the projected recovery of cotton, banana and cocoa prices will also boost growth. GDP growth is expected to recover gradually to 3.5 percent in 2021 and 3.7 percent in 2022 driven by global recovery, improved electricity supply with the entry into service of new hydroelectric dams; but would remain 3 percent below potential over 2020-2022.

**Chad**

4. **Chad is a low-income fragile country with substantial and multifaceted development challenges.** Chad is one of the poorest and least developed countries in the world, ranking 187th out of 189 countries and territories on the HDI in 2018. It faces a difficult geographical and geopolitical environment; it is the 5th largest country in Africa, landlocked, crossed by the Sahara, prone to climate risks, and has a very low population density. The security and humanitarian situations are also challenging given the security tensions along the border areas, serious terrorist threats particularly in the Lake Chad region, and given that Chad hosts the most refugees (on a per capita basis) in Africa. Despite efforts to protect priority social and productive spending, dwindling fiscal resources and poor social spending execution have disrupted vital public services. As a result, poverty is estimated at 41 percent in 2019 affecting 6.4 million people. Women continue to be disproportionately affected by poverty and systematically disadvantaged. The country currently ranks 187 out of 189 for the Gender Inequality Index with worsening trends in the past few years.

5. **By end 2019, Chad was gradually recovering from a severe economic and fiscal crisis caused by the 2014-2015 oil prices shock but the COVID19 outbreak and oil price shock will break the recovery and lead to a recession in 2020.** As result of the lower oil production and weak performances in the non-oil sector, growth is expected to fall to -0.2 percent in 2020. The services sector – hoteling, transport, aviation and restaurant – will be severely hit due to confinement measures and border closures. Industrial production will also fall due to the restriction of movement and lower input-related imports. The current account deficit and the fiscal deficit are expected to widen in 2020 as result of...
the exports’ slow down, the oil price shock, and border closures. Growth is expected to recover in the medium term as new oil fields accelerate production, oil prices improve, and subsidies for the COVID19 pandemic are implemented. The GoRC will need additional financial support to close its budget. Structural reforms are needed to improve the business environment, diversify the economy, and build resilience to external shocks. Infrastructure investments will be critical for a swift growth recovery. In particular, expanded access to reliable and affordable electricity will be key to support the reform agenda and the restart of the economy.

Sectoral and Institutional Context

Cameroon Power Sector

6. The proposed Project builds on and contributes to the World Bank Group’s extensive energy sector engagement in Cameroon, geared towards supporting the Government of Cameroon (GoC)’s reform agenda since the onset, efforts to promote private investment, and currently helping solve the sector’s financial sustainability issues. For the past two decades, the World Bank has been Cameroon’s lead partner in the energy sector, supporting reforms and financing projects and technical assistance in all subsectors, including: (i) rural electrification, through the closed Energy Sector Development Project (ESDP) and the ongoing Rural Electricity Access Project for Underserved Regions (REAPUR); (ii) hydropower development by supporting the construction of Lom Pangar; and (iii) the transmission segment, by materially contributing to the establishment and operationalization of the national transmission company (SONATREL) following the unbundling reform, and providing financing for the expansion of the transmission network though the Electricity Transmission and Reform Project (ETRP, approved in 2016). More importantly, the Bank is engaged in close policy dialogue to help solve outstanding regulatory and financial issues affecting the electricity sector. Following a series of reforms (see next paragraph), some incomplete, the sector remains fluid and populated by a wide number of stakeholders with contrasting interests. Such engagement is at the hardcore of WBG’s energy sector assistance program and all Bank-financed projects, including the proposed Project, are expected to contribute from different angles to lift the sector financial and operational performance. Specifically, by enabling the expansion of lower-cost electricity supply and power trade, the proposed Project is intended to lower electricity costs in the country, help expand the customer basis and provide additional revenues through export of excess supply.

7. During the last two decades, Cameroon’s electricity sector has gone through a series of structural reforms to enhance sector efficiency and attract private investment in generation, transmission, distribution. In 1998, the GoC enacted the Electricity Law which established the electricity regulator (Agence de Regulation du Secteur de l’Electricite – ARSEL) and the rural electrification agency (Agence pour l’Electrification Rurale – AER). Generation was partially unbundled by opening the generation sub-sector to competition and allowing third-party access to the transmission grid while setting up independent dispatching. In 2001, the GoC privatized the state-owned, vertically integrated power utility (Societe Nationale d’Electricite – SONEL), through the sale of a 56 percent equity stake and the award of a 20-year concession to the American Electricity Supply Corporation (AES), thus creating AES SONEL. In 2014, AES SONEL became ENEO after AES sold its equity share to ACTIS, a British private equity firm. Finally, in 2011, the GoC enacted the New Electricity Development Corporation law which introduced key reforms, including: (i) the transmission sub-sector was unbundled from ENEO’s concession mandate and a state-owned national transmission company (SONATREL) established, although this became operational only in 2019; (ii) new governance arrangements for water storage were introduced, including the transfer of the water storage concession of the Sanaga Basin reservoir to a dedicated company (Electricity Development Corporation – EDC); and (iii) a new tariff regime was established. SONATREL is responsible for development and operation of the transmission grid nationally and the interconnections with neighboring countries. In 2015, the GoC formalized SONATREL’s role as national transmission system operator (TSO) and requested support from the World Bank to strengthen its capacity and make the company operational. Considerable results were achieved through the above sector reforms. In particular, the reforms successfully attracted private sector participation in generation, where investments
delivered the 216 MW gas-fired Kribi power plant and 88 MW heavy fuel oil (HFO) Dibamba power plant and the upcoming 420 MW Nachtigal hydropower plant, which is one of the few public-private partnerships in hydropower in Sub-Saharan Africa. IFC and MIGA materially contributed to the privatization of the distribution utility. Furthermore, IBRD, MIGA and IFC have provided risk mitigation, insurance and debt and equity for all these projects.

8. Despite the extensive reform effort, Cameroon’s electricity sector still faces substantial challenges, including the uneven access to service, ENEO’s weak performance, incomplete governance, SONATREL’s operational constraints and underinvestment in network infrastructure. Electricity access in the country reaches about 50 percent and this national average mask striking disparities between the southern and center regions, where access varies between 80 and 100 percent, and the northern regions where it remains much lower. ENEO’s technical and commercial losses are high at 30 percent, and the company has failed to expand the network in line with electricity access needs. While the average electricity tariff currently standing at US$0.16/kWh is rather high compared to the regional average of US$0.13/kWh, it falls below cost recovery, which requires the GoC to compensate ENEO for the revenue shortfalls. The inadequate liquidity compels the utility to delay maintenance and rely on costly short-term borrowing to finance its operations. In 2018, ENEO’s payment delays caused independent power producers to reduce generation. Delayed network maintenance and investment further weaken the reliability of electricity services. SONATREL been operational since January 1, 2019, but in the absence of transmission service agreements (TSAs), especially with ENEO and with assets yet to be transferred, the company’s financial situation remains fragile, and its operational capacity, let alone investment capacity, is impaired. Debt and arrears have accumulated across the value chain, and the electricity sector as a whole is in a weak financial situation. In these circumstances, public funding will continue to be needed to catch up on the backlog of investments in transmission infrastructure.

9. Cameroon's abundant hydropower potential holds the key to accommodating growing electricity demand in the country at the least cost as well as to becoming a regional net exporter of electricity. Cameroon’s hydropower potential is estimated at 12,000 MW, the third largest in Sub-Saharan Africa, to be found mainly in the Sanaga River Basin in the South of the country. According to Cameroon’s 2014 Least Cost Power Sector Expansion Development Plan (Plan de Développement du Secteur de l’Electricité – PDSE), hydropower is the most effective option to accommodate demand for electricity, and in fact by 2023 it should account for 75 percent of the country’s energy mix. Among all sites, the Sanaga River Basin offers the best opportunities to scale up generation capacity well beyond national needs. The Lom Pangar Hydropower Plant (LPHP) Project, financed by the World Bank and commissioned in June 2017, increased the guaranteed, all-season capacity on the Sanaga River by approximately 40 percent, leading immediately to additional 120 MW of generation capacity during dry seasons. In the medium-term, the Lom Pangar dam will enable further development of large-scale capacity and hydropower sites downstream promise to be very attractive power assets. Among them, the next in line is the Nachtigal plant, which is expected to be commissioned by 2024. Overall, it is estimated that 4,200 MW of capacity could be added on the Sanaga River through large hydropower sites and 1,800 MW through smaller sites.

10. Building a national transmission network is a sine-qua-non condition to accommodate demand in the northern regions and enabling regional power trade. Cameroon’s power transmission system consists of three networks, including RIS, RIN and the Eastern Interconnected Network (Reseau Interconnect Est – RIE). RIS and RIE are currently connected to one another; RIS and RIN are not, de facto creating two isolated power systems in the country. RIS connects all hydropower plants on the Sanaga River, but in the absence of interconnections among the three systems, their supply can only serve the southern region and will become redundant soon. Building a national transmission network is critical to enable the development of the hydropower potential of the Sanaga River Basin as part of an optimized national power system, with large benefits in terms of expanded and more cost-efficient electricity supply. In particular, PDSE has identified the interconnection of RIS and RIS as the most impeding investment to provide electricity to the northern
regions. Furthermore, a South-North transmission backbone is the key piece of infrastructure to enable Cameroon to connect to neighboring countries such as Chad and Nigeria and monetize its excess electricity supply through exports.

**Chad Power Sector**

11. **The proposed Project marks the Bank’s reengagement in Chad’s power sector after more than a decade, at a time when the sector faces paramount challenges.** These includes an access rate amongst the lowest in the world, costly diesel-based domestic generation and high inefficiencies in operations and commercial aspects of the virtually bankrupt national utility SNE, relying largely on budget transfers through fuel supply, to finance its operating costs. Bank’s reengagement is articulated along three pillars: (i) reducing the cost of electricity generation through diversification of the energy mix towards cheaper sources, namely affordable imports and domestic solar generation; (ii) improving the financial sustainability of the energy sector, and (iii) increasing access to modern electricity sources. In addition to the proposed Project, the Bank is preparing the Chad Energy Access and Fiscal Management DPF (P173755), an energy DPF programmatic series scheduled to board on Q2FY21 to support critical reforms in the sector aimed to extend electricity access in a sustainable manner, in line with the Alliance for Sahel and SDG7 objectives.

12. **Chad has one of the lowest electricity access rates in Sub-Saharan Africa, power supply is very limited and the multifaceted electricity sector challenges compound the country’s financially distressed position.** Although Chad is blessed with significant solar, wind, oil and gas resources, its electricity access rate is amongst the lowest in the world at about 7 percent. The power system is incipient compared to total population size of about 16 million. Access is concentrated in N’Djamena, where the nascent distribution network serves only a third of the residents with poor quality of services. Besides N’Djamena, a few cities have electricity networks (six regional centers and five secondary towns) but these are not interconnected. The bulk of available generation capacity, mostly diesel-based, is also located in N’Djamena and comprises a SNE’s plant of 71 MW and IPP plants of 46 MW. Installed available generation capacity outside of N’Djamena is below 10 MW. Faced with poor or lacking service by SNE, many enterprises and some households use self-generation equipment. In the absence of a least cost development plan, over 25 unsolicited IPP proposals, mostly solar PV with a total capacity exceeding the current network capacity, are tentatively in the pipeline. SNE infrastructure is ageing and in disrepair due to the chronic loss-making operation of the company. The average tariff of USD0.25/kWh is well below the cost of service of USD0.43/kWh billed, which is caused by the high generation costs and SNE’s operational and commercial inefficiencies. With total losses and collection rate at 35 and 43 percent respectively, SNE collects revenues for less than a third of the electricity injected into the network. Client receivables and suppliers’ debt increase at unsustainable paces. Even though the GoRC subsidizes SNE operations through the provision of fuel (subsidies exceeded electricity sales in 2017 and represented 0.8 percent of GDP), SNE is facing chronic cash shortages preventing it from properly maintaining its assets let alone investing in new ones to expand access.

13. **The diversification of the energy mix towards affordable imports and cheaper solar PV generation are key to improve electricity service in the country in a sustainable manner.** Importing cleaner and more cost-efficient electricity from Cameroon will allow Chad to more than double the available power supply and expand on-grid access to electricity in the country. Furthermore, by displacing costly thermal generation, imports will directly reduce the cost of supply in Chad as well as enable the country to increase the penetration of intermittent renewable energy – solar and wind -- that otherwise are constrained by the small size of the domestic power system. Improvements in operational and financial performance of SNE will further help reduce costs of service and gradually bridge the gap towards cost reflective tariffs, thereby reducing the need for budget transfer to the sector.

**C. Proposed Development Objective(s)**
Development Objective(s) (From PAD)
14. The Project Development Objective (PDO) is to: (i) interconnect the Southern and Northern power systems of Cameroon; (ii) to enable electricity trade between Cameroon and Chad; and (iii) increase access to electricity in Chad capital city of N’Djamena.

Key Results
15. The expected PDO level results include:
   (a) Electricity transmitted from RIS to RIN (GWh per year)
   (b) Electricity traded between Cameroon and Chad (GWh per year)
   (c) People provided with new or improved electricity services (number)

16. Intermediate Indicators include:
   (a) RIS-RIN HV transmission line (km)
   (b) RIS-RIN substations (number)
   (c) Cameroon-Chad Interconnector HV transmission line (km)
   (d) HV substations in Chad (number)
   (e) Meters installed in N’Djamena (number)
   (f) Total losses in N’Djamena (percent)
   (g) Female-headed households provided with new electricity services (percent)
   (h) Share of registered grievances that are addressed (percent)

D. Project Description
17. The Project’s main components are as follow:

18. Component 1: Cameroon RIS-RIN Interconnection (US$375 million, of which IDA Credit US$295 million and counterpart funding of US$80 million), which will finance all costs associated with the construction of the RIS-RIN Interconnection. Specifically, this component is articulated in the following sub-components:
   (i) Sub-component 1.A: Construction of RIS-RIN Interconnection (US$266 million, all IDA credit). The RIS-RIN Interconnection will be a double-circuit 225 kV transmission line spanning over 514 km from Nachtigal in the RIS to Hourou Oussoa (near Ngaoundere) in the RIN with four substations (Ntui, Tibati, Yoko and Hourou Oussoa). All costs related to works and equipment for the construction of the line and the substations, including dedicated voltage regulation equipment, will be financed through the IDA credit. Consistent with the ESIA, the routing of the RIS-RIN takes due account of flooding risks, which may be increasing due to climate change, and specifically avoids the main flooding areas of Reservoir du Maga and Fleuve du Lagone.

   (ii) Sub-component 1.B: Project implementation support to SONATREL (US$24 million, all IDA credit). This subcomponent will finance the establishment of a Project Implementation Unit (PIU) within SONATREL, specifically assigned to implement the construction of transmission lines and associated infrastructure under the Project, including the RIS-RIN Interconnection and the section of the Cameroon-Chad Interconnection within Cameroon’s borders (please see section on implementation arrangements for more details). This unit will be responsible for ensuring compliance with World Bank’s Operational Policies and will be adequately staffed. SONATREL will also hire a reputable international engineering company to serve as Owner’s Engineer (OE), which will support the PIU in all activities pertaining to project management and supervision.

   (iii) Sub-component 1.C: Implementation of the ESMP and RAP (US$83.5 million, of which US$3.5 million IDA
credit and US$80 million of counterpart funding). This subcomponent will finance the implementation of the Resettlement Action Plan (RAP) and the Environmental and Social Management Plan (ESMP) related to the RIS-RIN Interconnection. Costs for compensation and assistance of project-affected people (PAP) will be covered by the GoC. Also, the majority of ESMP measures will fall under the responsibility of contractors and will be included in the construction contracts. Additional costs for eligible expenditures (such as consulting services, awareness campaigns, costs for operating the Divisional Committees in charge of monitoring ESMPs in the project areas, training, etc.) to support the RAP and ESMP implementation by government authorities or SONATREL will be covered by IDA. The estimated costs of the RAP and ESMP are only tentative at this stage. The exact locations affected by the line and the technical specifications of the needed infrastructure remain to be confirmed based on the ongoing detailed network study. As part of project preparation, SONATREL has completed a preliminary Environmental and Social Impact Assessment (ESIA), which has identified in broader terms environmental and social risks associated with the Interconnection and related mitigation measures. A full ESIA including a RAP needs to be prepared based on the results of the network study.

(iv) Sub-component 1.D: Technical assistance for the negotiation of contracts for power trade and for commercialization of optical fiber (US$1.5 million, all IDA credit). This subcomponent will finance training and consulting services to support the preparation and negotiation of contracts needed for power trade and the commercialization of optical fiber (OPGW) along the Cameroon-Chad Interconnection. Specifically, a consultant will be mobilized to: (i) provide training on the principles and the different forms of power trade contracts, including power purchase agreements (PPAs) and transmission service agreements (TSAs) from the viewpoints of buyer, seller, and financiers, and advice on the key aspects of contract negotiation in terms of operation, schedule, penalties for under delivery, payment terms, and termination; and (ii) help draft term sheets PPA and TSA and assist in their finalization/negotiation. While the GoC is expected to assign the entities that will enter such contracts, funding will be provided to SONATREL to advance the procurement process. SONATREL will also hire a consultant firm to assist the PMU in identifying the process, business model and contract needed for the resell of the optic fiber capacity available on the network.

19. Component 2: Cameroon-Chad Interconnection (US$328 million, of which US$265.5 AfDB; US$13.5 million of counterpart funding and US$49 IDA grant). This component will involve the construction of: (i) a 225 kV high-voltage (HV) double circuit main transmission line between Hourou Oussoa to Maroua via Garoua(Cameroon); (ii) a 225 kV high-voltage single circuit link between Maroua (Cameroon), Bongor, Guelendeng and Gassi near N’Djamena (Chad) and between Maroua, Kousseri (Cameroon) and Gassi; (iii) related high-voltage (HV)/medium-voltage (MV) transformer stations; and (iv) rural electrification distribution networks along the transmission line corridors. In total, about 1,024 km of HV transmission lines (786 km in Cameroon and 238 km in Chad) will be constructed. In addition, SONATREL and SNE will hire a common Owner’s Engineer to supervise the construction of the line. Costs for this component will be shared as follows: (i) AfDB will finance the Interconnection within Cameroon’s borders as well as the costs of the common Owner’s Engineer to be borne by SONATREL; (ii) the GoC will finance the compensation of PAP (RAP costs) in Cameroon; (iii) IDA and AfDB will share the costs of the Interconnection within Chad’s borders. Specifically, AfDB will finance the contract for HV transmission lines; IDA will finance the contract for HV substations in Bongor, Guelendeng and Gassi financed by IDA; (iv) IDA will cover the costs of the common Owner’s Engineer to be borne by SNE; and (v) Compensation of PAP in Chad is expected to be financed by AfDB. It should be noted that the exact costs of the cross-border line and AfDB financing are based on the analysis conducted at the time the AfDB project was approved and will have to be confirmed based on the detailed technical study soon to be launched. Funding from the IDA allocation to Chad (US$9 million, all IDA grant) is set aside to address any contingency that may arise, since the country is new...
to the construction of HV, cross-border transmission infrastructure and in light of the fragile context with very limited track record on risk premiums associated with large infrastructures contracts. Conversely, in Cameroon this type of investments, and the related technology and market, are well tested. In parallel to the Project, AfDB will finance the electrification of rural areas along the corridor of the interconnector, with additional financing in the order of US$40 million.

20. **Component 3: Electricity access in Chad (US$41 million, all IDA grant).** This component will finance investments to enhance and expand the electricity grid in N’Djamena and improve the technical and operational performance of SNE; as well as project implementation support. Overall, this component is expected to contribute to economic activities, improve shared prosperity, and enhance the resilience of host communities to climate change. Activities are broken down in two subcomponents as follows.

   (i) **Subcomponent 3.A: Access extension (US$33 million),** which will finance: (i) the rehabilitation and expansion of the electricity transmission and distribution assets in N’Djamena, including power lines, substations, and transformers; (ii) the modernization of the SCADA system, including a telecommunication equipment for 47 substations; and (iii) improvements in SNE performance, through supply and installation of about 100,000 smart/pre-paid electricity meters and commercial management and billing systems, as well as technical support to implement these systems. More specifically, the Project will extend the HV substations of Gassi and Lamidji and add four connections to the MV network per substation to improve quality of service. The existing MV/LV network will be rehabilitated to decrease technical losses in N’Djamena. The distribution network will be extended and densified with the objective to double SNE’s clients base in N’Djamena and the upgrade of the dispatching center will improve security of supply. In order to improve SNE operation and commercial performance, the Project will finance SNE’s acquisition of an enterprise resource planning (ERP) software for the management of corporate resources, the roll-out of a geographic information system (GIS) for the MV/LV network and a client’s database. The Project will finance a Revenue Protection Program (RPP), with the installation of a data management software and a fully integrated commercial management system, alongside with the deployment of smart/prepaid meters. This subcomponent will also finance the preparation and implementation of safeguards instruments including ESIA/ESMPs and RAPs for the network investments in N’Djamena. The cost of compensation will be covered by the AfDB financing. Finally, specific activities aimed to reduce disparity of electricity access of poorer urban households, and in particular female-headed households, will be identified and financed.

   (ii) **Subcomponent 3.B: Implementation support (US$8 million),** which will support the project implementation unit within SNE, as well as advisory services for PPA preparation and sector development. Support to SNE’s PIU will notably encompass the recruitment of: (i) the Owner’s Engineer to prepare the priority investment program for the N’Djamena power grid and subsequently support SNE in supervising its implementation (US$2 million) and (ii) the consulting company to provide project management support to the Project Implementation Unit to be established within SNE1 (US$3 million). In addition, this subcomponent will provide transaction advisory services to SNE and the government of Chad for the preparation and negotiation of contracts needed for power trade with Cameroon through the cross-border interconnector, including critical commercial and operational arrangements (schedule, penalties, payment terms, risk mitigation arrangements and termination). It will also include technical assistance to the Ministry of Petroleum and Energy on selected power sector topics.

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1 « Assistance à la Maitrise d’Ouvrage (AMO) » in French.
E. Implementation

Institutional and Implementation Arrangements

21. SONATREL and SNE will be the implementing agencies for the Project’s activities within their respective countries. Specifically, SONATREL will be responsible for the construction and operation of the RIS-RIN Interconnection and the sections of the cross-border transmission line within Cameroon’s borders. Similarly, SNE will construct and operate the cross-border transmission line within Chad’s borders and the infrastructure needed to electrification expansion under the Project.

22. Nonetheless, the two countries have also agreed to set up a common governance structure to ensure overall coordination both at the political and technical level for the construction and operation of the cross-border Interconnection and to facilitate power trade between Cameroon and Chad. This structure includes: (i) an Inter-State Steering Committee (Comité de Pilotage - CdP) chaired in turn by the energy ministers of the two countries, which will take strategic decisions and ensure overall oversight of the Project; and (ii) a Joint Technical Steering Committee (Comité Technique Cameroon-Tchad – CT), placed under the joint authority of the Directors General of SONATREL and SNE, which will provide project supervision across the two countries, monitor progress for reporting to the CdP and address technical issues as they arise. Furthermore, SONATREL and SNE will jointly recruit a single consulting engineer to serve as owner’s engineer (COE), entrusted with supervision of construction works for the cross-border interconnection from the Ngaoundere substation in Cameroon to the Gassi substation in Chad.

Project implementation in Cameroon

23. On the Cameroon’s side, the Project will be implemented by SONATREL through the establishment of a PIU. SONATREL’s General Director will be responsible for overall oversight of the Project. Also, a senior SONATREL staff will be appointed as Project Director (PD) and provide close project supervision, reporting back to the General Director. The PIU will work under PD’s oversight and have responsibility for the day-to-day management of the Project. It will include a central office in Yaoundé and two local offices in Ngaoundere and Maroua respectively, given the very distant locations involved with the Project. The PIU will be headed by a Project Coordinator (PC) and shall include at minimum the following personnel: (i) a seasoned Procurement Specialist (PS); (ii) a Financial Management Specialist (FMS); (iii) an Accountant; (iv) an Environmental Specialist (ES); (v) a Social Development Specialist (SDS); (vi) a Monitoring and Evaluation Specialist (MES); (vii) a Technical Coordinator; and (viii) two Coordinators, of for each local offices. Additional technical expertise is expected to be needed, ideally to be assigned from SONATREL, or recruited with project funds during project implementation. SONATREL will also recruit and mobilize an Owner’s Engineer (SONATREL OE) to supervise preparatory and construction works for the RIS-RIN Interconnection and to interface with the COE jointly appointed by SONATREL and SNE to supervise the cross-border interconnection. SONATREL OE will be selected competitively and financed under the Project.

Project implementation in Chad

24. SNE has established a PIU reporting to senior management, which will be staffed with essential personnel needed for implementing a project, including technical, project management, procurement, financial management, environmental and social safeguards. In the short term, the PIU will require support virtually in all areas of project implementation given that SNE does not have experience with Bank-supported projects and faces severe capacity constraints. To this end, the PIU will be supported by a Project Management Support (PMS) consultancy firm, located in-house that will work in tandem with SNE PIU. This arrangement will provide SNE with the required skill mix to implement project activities without delays. It will also enable the transfer of project management knowledge to SNE and its PIU, so
that they could largely assume project management responsibilities within three years from the beginning of project implementation. The PIU will be supported by: (i) an owner’s engineer to supervise the implementation of component 3; and (ii) the COE for supervision of the cross-border interconnection.

F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The proposed Project entails construction of nearly 1,600 km of high-voltage (HV) transmission lines (1,350 km in Cameroon and 240 km in Chad), which will connect the southern regions of Cameroon to the North of the country, through the interconnection of Cameroon’s southern and northern power systems (RIS-RIN Interconnection), and beyond to Chad, through the AfDB-financed Cameroon – Chad Interconnection. The Cameroon North - South Interconnector, which would connect the RIN and the RIS, underpins both a domestic integration and a regional integration strategy. The project development objectives are to increase Cameroon’s export capacity towards Chad. This transmission line will traverse savannah, wetlands, grasslands, forest and farmlands. It will run along or near the boundaries of protected areas and other important habitats such as the Benue and Mbam et Djerem national Parks in Cameroon and the Mandélia National Park and Toupouri lowlands (RAMSAR site) in Chad.

G. Environmental and Social Safeguards Specialists on the Team

Kristyna Bishop, Social Specialist
Aurelie Marie Simone Monique Rossignol, Environmental Specialist
FNU Owono Owono, Social Specialist
Cyrille Valence Ngouana Kengne, Environmental Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

<table>
<thead>
<tr>
<th>Safeguard Policies</th>
<th>Triggered?</th>
<th>Explanation (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment OP/BP 4.01</td>
<td>Yes</td>
<td>The long HV transmission lines to be constructed under the Project will traverse savannah, wetlands, grasslands, forest and farmlands, and, in light of the potential adverse environmental and social impacts, including significant, permanent and irreversible effects, the Project has been designated as Category A. In compliance with OP/BP 4.01, a number of safeguards instruments have been prepared or will be prepared for the Project as follows:</td>
</tr>
</tbody>
</table>

Apr 07, 2020
(i) ESIAs and ESMPs were prepared in 2017 for the AfDB-financed cross-border line. These instruments are now being updated by SONATREL and SNE to reflect any change occurred in the occupancy of the corridor and in the circumstances of the project-affected people. Once finalized and approved, they will be re-disclosed in both countries and in the Association’s website.

(ii) For the purpose of preparing the RIS-RIN Interconnection, SONATREL carried out: (i) a preliminary ESIA (PESIA) including a corridor assessment/scoping study and the analysis of alternative routes. The PESIA was reviewed by the Bank and publicly disclosed on April 20, 2020 in Cameroon and in the Association’s external website on April 21, 2020. Site-specific ESIA, ESMP and RAP will be prepared once the detailed design of the RIS-RIN Interconnection is completed and exact locations identified. These instruments will be publicly consulted upon, finalized, adopted and publicly disclosed in form and in substance satisfactory to the Association.

(iii) For the new investments in electrification in N’Djamena under component 3, a framework approach has been applied because the exact locations of investments remain to be identified. An ESMF and RPF have been prepared by SNE and disclosed in country and in the Association’s website on April 17, 2020. Site-specific ESIA, ESMP and RAP will be prepared, consulted upon, and publicly disclosed in form and in substance satisfactory to the Association.

<table>
<thead>
<tr>
<th>Performance Standards for Private Sector Activities OP/BP 4.03</th>
<th>No</th>
<th>NA</th>
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The proposed alignment of transmission lines does not pass through any protected areas. However, this policy has been triggered because of their proximity to protected areas and other important habitats such as the Benue National Park, the Mbam-Djerem National Park in Cameroon and the Mandélia National Park and Toupouri lowlands (RAMSAR site). In addition, the line from Natchigal to Ngaoundere runs along or near the boundaries of one forest reserve. In addition, three cyangetic zones (ZIC 41:Likini-75000 ha; ZIC 42-Lukom:70850 ha and
Doumé Yoko: 24,245 ha) were found in the Project’s area of influence in Cameroon.

<table>
<thead>
<tr>
<th>Section</th>
<th>OP/BP</th>
<th>Triggered</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forests</td>
<td>4.36</td>
<td>Yes</td>
<td>The Project does not support commercial exploitation of forests. However, this policy has been triggered because RIS-RIN Interconnection line is likely to pass through two community forests. In addition, the ESIA/ESMP prepared for the AfDB-financed cross-border line identified the felling of trees along the transmission line ROW covering a total of 4,733 hectares in Cameroon and 1,455 hectares in Chad.</td>
</tr>
<tr>
<td>Pest Management</td>
<td>4.09</td>
<td>No</td>
<td>This project does not entail pest management</td>
</tr>
<tr>
<td>Physical Cultural Resources</td>
<td>4.11</td>
<td>Yes</td>
<td>Previous studies conducted in the region have revealed the existence of heritage sites with local significance (such as graveyards) and the ESIA/ESMP prepared for the AfDB-financed cross-border line has identified potential impacts on graves. Mitigation measures will be incorporated into the PESIA and ESIA/ESMP reports.</td>
</tr>
<tr>
<td>Indigenous Peoples</td>
<td>4.10</td>
<td>No</td>
<td>OP 4.10 on Indigenous People has not been triggered as the PESIA conducted in Cameroon confirmed that there are no indigenous communities located along the corridor of the RIS-RIN Interconnection, including the Nachtigal - Tibati area. There are no indigenous peoples in the area in which the transmission line will be constructed in Chad.</td>
</tr>
<tr>
<td>Involuntary Resettlement</td>
<td>4.12</td>
<td>Yes</td>
<td>Activities financed by the Project will require land acquisition and will likely generate negative impacts on communities and assets along the transmission lines in Cameroon and Chad and therefore operational Policy 4.12 (OP 4.12) on Involuntary Resettlement has been triggered. As the exact routes of the transmission lines are not yet well known, two RPFs were prepared and disclosed for Cameroon and for Chad to set land acquisition guidelines principles to be applied when conducting specific RAPs. A RAP will be prepared for the RIS-RIN Interconnection once exact locations are known and it will identify people and assets affected by the Project, propose compensation mechanisms and recommend additional measures in case of physical displacements, all in accordance with the provisions of OP 4.12. The RAP prepared for the AfDB-financed cross-border interconnection in 2017 will be</td>
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</table>
updated together with the ESIA/ESMP. The Chad's RAP prepared in 2017 (covering Bongor and Guelendeng itinerary and N'djamena) is also being updated. Construction or expansion of substations in ten localities could also generate land acquisition and loss of assets or economic displacement. These potential impacts will be considered within the framework of the RAPs planned above or in specific RAPs depending on their location. The construction of additional rural electrification distribution networks along the transmission line corridors in Cameroon and Chad may also generate impacts on PAPs and goods and may necessitate land taking. Based on specific ESIs’ and RPFs’ recommendations, additional RAPs could also be elaborated.

Safety of Dams OP/BP 4.37 No This project does not entail the construction of dam and will not depend on the performance of an existent dam
Projects on International Waterways OP/BP 7.50 No This project does not affect international waterways
Projects in Disputed Areas OP/BP 7.60 No This project will not be implemented in disputed areas

**KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT**

**A. Summary of Key Safeguard Issues**

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The long HV transmission lines to be constructed under the Project will traverse savannah, wetlands, grasslands, forest and farmlands, and, in light of the potential adverse environmental and social impacts, including significant, permanent and irreversible effects, the Project has been designated as Category A. Adverse impacts may include: loss of vegetation and vulnerable species on the International Union for Conservation of Nature (IUCN) Red list; modification and fragmentation of wildlife habitats, and degradation of ecosystem services including spread of invasive species; bird and bat collisions with conductors; health and safety risks for workers and neighboring populations; loss of assets and income by project affected persons. Specifically, the risk classification has been based on the following factors: (i) total length of transmission lines, nearing 1,600 km across the two countries; (ii) the amount of land to be acquired for wayleave; (iii) the falling of trees along the right-of-way (RoW) of the lines – the cross-border line alone is expected to require a total of 4,733 hectares in Cameroon and 1,455 hectares in Chad; the RIS-RIN in Cameroon will likely require a total of 2,659 hectares; (iv) the corridor traversing sensitive natural areas, including passing through two community forests and near the boundaries of one forest reserve, as well as through a wildlife migration corridor; (v) the transmission line’s proximity to protected areas and other important habitats such as the Benue and Mbam et Djerem national Parks in Cameroon and the Mandélia National Park and Toupouri lowlands
(RAMSAR site) in Chad; (vi) the number of project-affected people (PAPs), currently estimated at 990 in Chad and 1,311 in Cameroon, as well as buildings, dwellings, trees, community properties (wells and boreholes) and graves; (vii) permanent restrictions to land use and/or along the transmission lines and associated substations.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:
The Project is expected to generate large environmental benefits as deriving from the substitution of polluting diesel-based power generation with hydro power or the more efficient management of power networks enabled under Project. However, landscape and habitat fragmentation are one the main long-term consequences of high-voltage (HV) transmission lines installation because of the physical presence of transmission lines (nearly 1,600 km across the two countries), and effects of transmission line & Right-of-Way Maintenance. Long-term consequences include changes to habitat, bird strikes, access issues, noise effects and associated avoidance behavior, and electric and magnetic fields. To keep trees and shrubs from interfering with transmission lines, and to make sure workers can access the lines to maintain and repair them, SONATREL and SNE maintain the rights-of-way.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.
Nachtigal-Bafoussam-Foumban-Banyo-Tibati-Ngaoundéré route potentially faces many challenges in terms of socioeconomic impacts (crosses the territory of 14 municipalities that includes approx. 330,545 people living in settlements affected by the corridor; there are around 200 settlements within the corridor, 01 primary school within the corridor, the population density gradually increases from 71 to 80 inhabitants/km2, etc.) and it passes through a protected area. To avoid or minimize adverse impacts, this alternative is being abandoned. As far as substations are concerned, the final ESIA/ESMP report, to be grounded on technical designs, will identify and assess environmental, social, and health impacts and critical risks so that modifications can be made to the Project to reduce environmental, social and health risks and impacts.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.
SONATREL and SNE will be implementing the Project within their respective countries’ borders, and as a result, they will be also responsible for implementation of the related environmental and social safeguards. While they are both committed to this role, the two companies do not have an established environmental and social (E&S) team and they will have to resort to external expertise. Each of them will recruit a Social and an Environmental specialist who will join their respective PIUs and coordinate with Owner’s Engineers and other consultants hired to support project implementation, so as to ensure continuous engagement with communities and ongoing E&S performance monitoring. The two companies will also need capacity building to strengthen their management and monitoring of occupational safety risks, environmental and social risks and impacts related to the construction and operation of transmission lines and substations.

EPC contractors entrusted with works and their sub-contractors will be subject to OHS contractual provisions and industry standards, which will match the scope of works and address aspects such as: construction site maintenance; worker accommodation; management of access roads including security and access, as well as fuel storage area, etc. Both countries have existing institutional structures overseeing environmental and social safeguards. They also have They also have a comprehensive environmental legal framework. The Project will bear the costs associated with the operation of the different Divisional Committees in charge of monitoring ESMPs (Cameroon) and the operation of the DEELCPN in charge of monitoring ESMPs in the project areas in Chad.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.
Project proponents (SONATREL and SNE); Ministry of Domain, Cadastral and Land Registration Affairs, Ministry of
Public Health, Ministry of Energy, Ministry of Environment, including devolved units; Contractors; ENEO; Supervision engineer; common Owner’s Engineer to supervise the construction of the cross-border interconnection, etc. Public Consultations and Information Disclosure. An ESIA/ESMP and RAP were prepared and disclosed in 2017 for the AfDB-financed cross-border. These instruments will be updated, consulted upon, cleared by the Bank as disbursement condition and disclosed. In accordance with OP4.01, ToRs for a full ESIA/ESMP for RIN-RIS interconnection were prepared and cleared before appraisal. An ESIA/ESMP (version of March 2020) has been conducted and publicly disclosed on April 20, 2020 in Cameroon and in the Association’s external website on April 21, 2020. Public hearings will be organized by the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) of Cameroon for consultation on the draft full ESIA/ESMP.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

<table>
<thead>
<tr>
<th>Date of receipt by the Bank</th>
<th>Date of submission for disclosure</th>
<th>For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-Mar-2020</td>
<td>22-Apr-2020</td>
<td>11-May-2020</td>
</tr>
</tbody>
</table>

"In country" Disclosure
Cameroon
21-Apr-2020

Comments

Chad
17-Apr-2020

Comments

Resettlement Action Plan/Framework/Policy Process

<table>
<thead>
<tr>
<th>Date of receipt by the Bank</th>
<th>Date of submission for disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-May-2020</td>
<td>06-May-2020</td>
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</tbody>
</table>

"In country" Disclosure
Cameroon
06-May-2020

Comments
C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?  
Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?  
No

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?  
Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?  
Yes

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?  
Yes

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?  
Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?  
Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?  

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

OP/BP 4.36 - Forests

Has the sector-wide analysis of policy and institutional issues and constraints been carried out?  
No

Does the project design include satisfactory measures to overcome these constraints?  
Yes

Does the project finance commercial harvesting, and if so, does it include provisions for certification system?  
No
The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?
No

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?
Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?
Yes

Have costs related to safeguard policy measures been included in the project cost?
Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?
Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?
Yes

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Alexis Lucien Emmanuel Madelain
Senior Energy Specialist

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Alexis Lucien Emmanuel Madelain  
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11-May-2020           |
| Safeguards Advisor:  | Ashish Khanna  
11-May-2020           |
| Practice Manager/Manager: | Claire Kfouri  
14-May-2020           |