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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<tbody>
<tr>
<td>Mali</td>
<td>P166796</td>
<td>Mali Electricity Sector Improvement Project (MESIP)</td>
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<th>Practice Area (Lead)</th>
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<tr>
<th>Financing Instrument</th>
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<th>Implementing Agency</th>
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<tr>
<td>Investment Project Financing</td>
<td>Ministère de l'Economie et des Finances</td>
<td>Energie du Mali - S.A</td>
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Proposed Development Objective(s)

The Project Development Objectives are to improve the reliability and the efficiency of electricity supply in Bamako and the technical and commercial performance of EDM.

Components

Component 1- Improvement and expansion of transmission and distribution
Component 2- Capacity strengthening and technical assistance
Component 3 - EDM Governance improvement and support to the implementation of the EDM Restructuring Plan
Component 4 - Operational support

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

<table>
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<th>Total Project Cost</th>
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<td>Total Financing</td>
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<td>of which IBRD/IDA</td>
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<td>Financing Gap</td>
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DETAILS

World Bank Group Financing

| International Development Association (IDA) | 150.00 |
B. Introduction and Context

\textbf{1. Country Context}

1. Mali is a vast, landlocked and geographically diverse country located in the western part of Sub-Saharan Africa. It is geographically diverse and encompasses parts of the Sahara Desert, the Sahel in the North, and more fertile areas in the South. The country spreads over a surface area of 1,241,230 square kilometers and had a population estimated at 18.6 million in 2017. About 65 percent of Mali’s land area is desert or semidesert with economic activity confined to the riverine area irrigated by the Niger River. Approximately 75 percent of the active population works in the agriculture sector. Mali’s population increases by 3.02 percent on average, per year; and as such, it is expected to double by 2035. High population growth rates and adverse climatic events, such as the severe drought events in 2011, constitute major challenges for the country’s agriculture sector and food security, and the country’s poverty levels are highly vulnerable to climatic and economic shocks.

2. Mali has a low human development index (0.427), ranking 182\textsuperscript{nd} among 189\textsuperscript{th} nations (2017 ranking). This indicates a low level of achievement in three basic dimensions of human development – including life expectancy, level of education and standard of living. The national poverty rate of 42.7 percent in 2017, masks regional disparities in wealth distribution and a large urban-rural divide. Approximately 90 percent of all poor people live in rural areas (which cover 73 percent of the total population) and are concentrated in the south of the country, where the population density is the highest. Conflict - arising from allocations of increasingly deteriorating natural resources - has also increased the incidence of poverty.

3. In early 2012, some regions in the northern part of the country fell under the control of extremist forces, while a coup d’état in its capital city created political instability and turmoil. A strong international military response in early 2013 prevented further destabilization and a peace agreement between the Government of Mali (GoM) and the ‘Platform and Coordination Groups in the North’ in June 2015 has revived hopes for peace and stability. This political and security crisis eroded the ability of the GoM to provide basic services to the populations especially in the North, where some regions remain outside government control. Security conditions are volatile with armed groups defying State authority in the center of the country and criminal activities spreading to the South. With the progressive consolidation of political stability and improved security conditions in 2013, annual growth resumed at 2.3 percent and accelerated to 7 percent in 2014, its highest level since 2003 (when it was 7.6 percent). By 2014, economic growth had reached pre-crisis levels, indicating that the economy was catching up and recovering from the crisis.
4. **Despite volatile security conditions, with an average annual growth rate exceeding 5 percent over the 2014-18 period, economic performance remains strong.** Annual GDP growth is expected to hold steady at about 5 percent over the medium term. Cotton and gold exports make up around 80 percent of export earnings. The country's fiscal status fluctuates with commodity prices and rainfall patterns. In 2017, inflation rate was modest at 1.8% due to higher food prices and increased international oil prices. Despite pressure on public expenditure, the authorities have managed to contain the budget deficit to 2.9 percent, thanks to the rationalization of current expenditure and significant improvement in domestic revenue. The most recent debt sustainability analysis conducted by the International Monetary Fund (July 5, 2017) concluded that the country’s risk of external debt distress is moderate; though vulnerable to changes in financing conditions and shocks to export growth.

**B. Sectoral and Institutional Context**

5. **Despite significant progress over the last decade, access to modern energy services in Mali remains low, particularly in rural areas.** The electricity access rate in 2017, is about 39 percent nationally (compared to 64 percent in Senegal, 63 percent in Côte d’Ivoire), corresponding to an access rate of 86 percent in urban areas and 19 percent in rural areas (IEA, World Electricity Outlook 2017. In rural areas, households mainly rely on fuelwood for cooking, and kerosene lamps for lighting. The electricity service delivery in Mali is under the responsibility of the vertically integrated State-owned utility, *Energie du Mali* (EDM), which operates under a concession agreement signed with GoM. Within the perimeter of its concession, EDM has monopoly over power transmission and distribution, while generation is open to the private sector through Independent Power Producers (IPPs). EDM is therefore the single buyer for the power supplied by the IPPs. The energy supplied is generated by EDM-owned and rental thermal generation plants, electricity imports from Côte d’Ivoire and from the regional hydropower facilities (Manatali and Felou) owned by Senegal River Basin Authority (OMVS) and managed by SOGEM (OMVS’ energy management company).

6. **The Malian Rural Electrification Agency (Agence Malienne pour le Développement de l’Energie Domestique et l’Électrification Rurale, AMADER) has the mandate to provide electricity services to the population living outside EDM concession area).** The agency, which was created in 2003, supplies electricity to rural areas through a public-private partnership (PPP) approach, whereby rural electrification concessions mini-grids were awarded to private operators. As the cost of electricity in the rural concession areas are generally twice or more as expensive as grid-connected electricity, and reliability of electricity is poor, the Government is extending the EDM concession to selected rural areas to take over the rural concessions from the private sector. Additional efforts are underway to improve the business model and reduce costs in those rural areas where the grid is not expected to reach within the next decade.

7. **The Regulatory Agency for Electricity and Water (Commission de Régulation de l’Electricité et de l’Eau, CREE) was established in 2000 to regulate the water and electricity sectors.** CREE’s mandate, which is limited to EDM’s concession perimeter, is to protect customers, promote competition when possible, arbitrate disputes between the GoM and operators, and approve adjustments to ensure cost reflective tariffs. However, CREE does not have a mandate to reject new deals which arise from the direct negotiations of the government with private operators that may not be part of the least cost generation plan. In addition, while the GOM ultimately pays a tariff compensation should it decide not to implement the tariff adjustment, it is neither sufficient nor timely, and there is no legislated compensation mechanism. CREE reports to the Prime Minister’s Office.
8. Mali relies heavily on expensive thermal power generation, which has a significant impact on the financial viability of the sector. In 2017 the total peak demand in the interconnected system was 338 MW of which 80 MW (24 percent) was supplied by rental thermal rental plants, 63 MW (19 percent) by EDM thermal power plants, 116 MW (34 percent) by Manantali and Felou hydropower plants, and 50 MW (15 percent) from electricity imports from Côte d’Ivoire (see Figure 1). Additionally, isolated remote areas located far away from the grid are supplied with diesel-powered mini-grids, with a total installed capacity of 90 MW. Total losses (including technical and commercial losses) are 19 percent in 2017, mainly due to aging overloaded equipment, and weak customer management and information systems.

9. EDM continues to operate at a loss, as the average tariff of FCFA 96.5/kWh (US$16.98cts/kWh) does not cover the cost of service, which stands at FCFA 138.37/kWh (US$24.35cts/kWh). The tariff deficit of FCFA 41.87/kWh (US$7.37cts/kWh) is equivalent to 30% of the total cost of electricity per kWh. The operational subsidy of FCFA 34 billion (US$59.8 million) received from the government in FY2017 reduced the tariff deficit by the equivalent of FCFA16.3/kWh (US$2.9cts/kWh), leaving a gap of FCFA 25.57/kWh (US$... equivalent), equivalent to a total operational shortfall of FCFA 53.3 billion (US$93.9 million) for the year. This shortfall does not reflect cash needs to pay debt service and to fund capex.

10. To continue providing electricity services, EDM has relied on commercial loans to fill the ever-increasing cumulative cash shortfall. The situation has reached a point where EDM can no longer pay for debt service unless it contracts additional debt, and EDM is therefore insolvent. Faced with the increasing liquidity challenges, EDM has been relying heavily on short-term borrowing to meet its obligations and
has delayed payments to fuel and power suppliers, including for electricity imports from neighboring countries such as Côte d’Ivoire. As of FY2017, EDM had FCFA163.5 billion (US$288 million) of financial debt outstanding with 16 different financial institutions (including DFIs and commercial banks) plus FCFA34.5 billion (US$60.8 million) of trade payables. EDM’s operation is currently unable to generate enough cash to pay the company’s debt service obligations nor commercial obligations.

11. **The financial viability of EDM has been undermined by high generation costs as well as high losses and uncollected receivables.** EDM’s system losses stood at 19% in FY2017 and represented approximately FCFA 8.6 billion (US$15 million) of lost revenues. The company has been implementing measures which reduced losses steadily during the past years. Further reduction in technical losses will require investments that EDM cannot afford due to its current financial situation. The company had FCFA 105.6 billion (US$186 million) of past due receivables in FY2017, the vast majority of which relate to public lighting and government companies and other public-sector customers. It is essential that the underlying issue of public lighting be addressed, to find a suitable solution. Several options are under consideration, including the installation of solar rooftops, the implementation of an energy efficient program, pre-paid meters, or a centralized payment system to securitize EDM revenues arising from the consumption of electricity from the public sector.

12. **Poor planning and lack of funding has led to obsolete transmission and distribution infrastructure with high losses.** The quality of the electricity provided by EDM has been deteriorating due to aging transmission and distribution infrastructure. EDM’s customer base has increased rapidly, from 120,000 households to close to 400,000 in the past 12 years, with demand growing at a compounded annual growth rate of 10 percent over the same period. The Masterplan has identified investment needs estimated at US$1.3 billion through 2034, including US$867 million by 2021 alone. The scale and rapid pace of this investment plan illustrates the need to address the transmission and constraints to support the development of the sector.

<table>
<thead>
<tr>
<th>Sector Indicators</th>
<th>Mali</th>
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<tbody>
<tr>
<td>Legal access to electricity (% of population)</td>
<td>39</td>
</tr>
<tr>
<td>Installed capacity (MW)</td>
<td>694</td>
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<tr>
<td>Annual energy generation (GWh)</td>
<td>2,081</td>
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<tr>
<td>Number of registered customers</td>
<td>271,249</td>
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<tr>
<td>System losses (%)</td>
<td>19</td>
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<tr>
<td>Average electricity tariff (US$ per kWh)</td>
<td>96.5 (2018)</td>
</tr>
<tr>
<td>Average cost of service (US$ per kWh)</td>
<td>138.37 (2018)</td>
</tr>
<tr>
<td>Annual turnover (million, US$)</td>
<td>307</td>
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<tr>
<td>Collection rate (%) after 3 months</td>
<td>95</td>
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<tr>
<td>Number of utility staff</td>
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13. **To address the challenges faced by EDM (utility) and restore it profitability, a Debt Restructuring Study was conducted in 2018, which recommended a Corporate and Financial Restructuring Program intended to place the utility in the path to financial long-term sustainability (see Annex 6).** EDM’s Corporate and Financial Restructuring program would be implemented in two phases: (i) a 12-month financial and operational recovery period during which the company will implement actions that aim to
increase the EDM's revenue and fundraising by at least 10%, reduce the EDM's expense by 10%, and support the recovery of basic costs and improve the EDM's credit and capital profile in the first twelve months; and (ii) a stabilization period of 4 years (2020-2023) during which the company will implement the actions aimed at achieving the technical and financial viability in the medium and long term independently. This IPF operation and the proposed DPF operation under preparation will jointly support the restructuring program, which requires an improved governance that is underpinned by Disbursement Linked Indicators (DLIs) under this operation and Prior Actions in the proposed DPF series. The two operations will focus on the following three objectives: (i) meet the utility cashflow needs in the short run; (ii) relieve the utility of the debts service through the refinancing of the commercial debts; (iii) increase revenues and reduce expenses; and (iv) increase imports and improve the energy mix in the long run.

14. The objective of the Corporate and Financial Restructuring Program is to substantially reduce government subsidies to the power sector by 2021, with a residual progressive subsidy required to achieve universal access by 2030. Key actions identified are: (i) the recovery of past due receivables from government for public consumption and arrears in subsidy payment (ii) the implementation of a loss reduction and revenue protection plan (iii) a gradual tariff adjustment and revision program (iv) the refinancing of short term commercial debt for longer tenor (5 years) and lower interest rate (v) the progressive payment of supplier’s payables over two years period (vi) the improvement of the fuel mix by eliminating emergency plants, increasing import from neighboring countries (Cote d’Ivoire and Guinea), and the increase of hydro generation through the full refurbishment of existing hydro plants, and (vii) the separation of the Company’s activities in business units with their respective separate accounts in order to provide transparency and accountability, and facilitate strategic decision making and management.

15. The financing needs of the sector are huge and only a strong partnership with the donors and the private sector can allow the GoM to meet these needs. In addition to the investments needed for power generation, which will be mostly driven by the private sector, the transmission segment will need US$ 1.4 billion by 2034 as per the Masterplan1. An average of US$27 million of additional investments in the distribution network is needed annually, to deliver reliable and affordable and reliable electricity services to the growing number of customers.

16. While government recognizes that a tariff increase may be part of the solution, global experience in subsidy reform has shown that a political consensus is required to successfully increase end user electricity tariffs. For Mali, reaching political consensus at this time would be difficult given affordability concerns, as electricity tariffs continue to be significantly above the global average and an important component of monthly household expenditures. Globally, there are very few examples of successful tariff increases in fragile and conflict situations, especially when the tariff is already above the global average. In addition, countries in the sub-region are reluctant to increase tariffs, following the experience of Cote d’Ivoire, which had to reverse a modest retail tariff increase of 10% announced in 2016, following significant opposition from industries and mass protests. It should be noted that Cote d’Ivoire’s tariffs are already amongst the lowest in West Africa at 74 FCFA/kWh. Lessons learned globally

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1 Étude de la demande et du plan directeur d’investissements optimaux pour le secteur de l’électricité au Mali, Artelia Eau and Environnement, March 2015
shows that there is a greater likelihood of success in subsidy reforms if there is a credible promise of improved service delivery, which is an important enabling condition for a successful tariff increase.

17. **One of the major reforms that can significantly reduce the cost of service and be an important plank in the effort to achieve financial sustainability is a shift toward cleaner energy and electricity imports.** Following significant investments, the primary interconnectors pursuant to the WAPP will be completed by the early 2020s, which will enable Mali to be connected to the regional power market. A new transmission line with Côte d’Ivoire is under construction and will allow the import of 200 MW of electricity, while the upgrade of the transmission line from Manantali to Bamako, as part of the OMVS system, is planned for 2021. The Guinea-Mali interconnection project is approved and will provide 200 MW of electricity imports by 2025. As per figure 1, Mali intends to increase electricity imports from 30 to 61% percent of the energy mix (including gas and hydropower imports), which will substitute for the use of expensive thermal power. This would only be possible with sufficient investments in transmission and distribution, so that Mali can access excess generation capacity from neighboring countries.

18. **In addition, three new solar generation IPPs for a total capacity of 133 MWp are currently under preparation and will help to increase the generation capacity and lower the cost the energy mix.** Finally, the Bank is conducting a feasibility analysis for a 150 MW solar park, which is part of the WAPP Master Plan. Should the project be feasible, it would be developed as an IPP under a plug-and-play solar scheme to de-risk the investment.

C. Higher Level Objectives to which the Project Contributes

19. **The provision of improve electricity services and development of energy infrastructure represents a key component of the GoM’s strategy to support economic development.** The proposed project directly contributes to the World Bank Group’s assistance strategy in Mali, as set out in the FY16-19 Country Partnership Framework (CPF) for Mali, which lays out three areas of focus that will be supported by WBG’s interventions. It is specifically aligned with the third sub-objective of the second area of focus of the CPF (Creating economic opportunities) which aims to improve infrastructure and connectivity for all Malians by increasing the capacity of the energy sector both through policy reforms and investments, among others.

20. **The proposed project is aligned with the MFD pillar of the World Bank’s Africa Strategy.** This operation will improve the financial vitality of the utility, which will enhance its creditworthiness as of off taker of electricity supplied by independent power producers, whether from domestic sources of from electricity imports. In addition, by lowering the cost of service, the operation will improve the affordability of electricity for Malian consumers.

21. **The proposed operation is well aligned with the Sahel Alliance initiative, which is an international cooperation platform for the Sahel region officially launched in February 2018.** The Alliance seeks to contribute to the stabilization of the security situation and the eradication of poverty in the Sahel, by developing solutions for rural areas, creating employment for young people, improving

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2 Report No. 94005-ML
energy infrastructure, strengthening governance and fighting against climate change. In the energy sector, the objective of the Alliance is to double access to electricity within five years. The World Bank is one of Sahel Alliance’s founding members.

22. **The project is anchored in a strong sector dialogue with the Malian authorities and fits with the GoM’s strategic objective to achieve fiscal consolidation and strengthen public financial management and governance.** To that effect the GoM has adopted a new integrated public management reform plan for the period 2017-2021 (Plan de Réforme de la Gestion des Finances Publiques au Mali, PREM) which aims to strengthen fiscal discipline and strategic allocation of resources. Currently, the energy sector relies considerably on public subsidies, which particularly benefit better off urban households. The opportunity cost of these subsidies is deemed high as alternative use of these public resources is likely to be more poor than its present use. The improvement of the performance of the energy sector (and that of EDM) as well as the restoration of its financial sustainability are therefore at the center of GoM reform agenda. The project supports the electricity sector reform strategy of the GoM outlined in the 2017 roadmap (Feuille de Route pour Appuyer le Développement du Secteur de l’Energie au Mali), which presents a combination of policy reforms and investments to restore financial equilibrium in the sector.

23. **The project complements other World Bank operations in the sector as part of a comprehensive development assistance package to support the development agenda outlined by the GoM’s authorities.** It is a follow up of the IDA-funded Mali Energy Support Project (P108440), which aims to improve the access and efficiency of electricity services in Bamako and other targeted (grid-connected) areas in the country, is expected to close by end June 2018. The Rural Electrification Hybrid System Project (P131084), also under implementation, aims to expand access to modern energy services in rural areas, and to increase renewable energy generation in selected areas.

24. **The project strengthens the reform agenda of the Second Poverty Reduction and Inclusive Growth Support Operation (P161619)** which supports (i) reforms to enhance the efficiency of the electricity sector, and (ii) the implementation of a revenue protection mechanism through the installation of up to 6,000 smart meters for large electricity customers – about 40 percent of the total revenue generated. A new Development Policy Financing (DPF) is currently under preparation in coordination with this operation and is focusing on (i) the timely payment of the central administration and government entities electricity bills, (ii) the adjustment of medium voltage tariffs and subsidies, (iii) the clearing central administration’s arrears, (iv) the restructuring EDM’s debt with commercial banks, and (v) the recapitalization of EDM.

25. **In addition, three regional projects involving Mali, have just been approved,** as follows: (i) the ECOWAS (P164044) Regional Electricity Access Project which aims to connect 100,000 households to the grid from regional substations in Mali (ii) the Solar Development in Sub Saharan Africa SOP (P162580), which seeks to promote the development of the country’s solar generation potential through supporting the preparation of a solar park and the (iii) Regional Off-grid Electrification Project (P160708), which seeks to develop the market for off-grid access through solar photovoltaic systems. Analytical work is also deployed through a grant provided by the Public-Private Infrastructure Advisory Facility (PPIAF) to support the private sector participation in the energy sector in Mali, and an Energy Sector Management Assistance Program (ESMAP) grant will support the preparation of a tariff and cross subsidy study. A Global Infrastructure Facility (GIF) operation is under preparation to provide assistance to the development of hydro connected solar systems (floating solar) as well as a 150 MW regional solar park in Mali.
C. Proposed Development Objective(s)

A. PDO

26. The Project Development Objectives (PDO) are to improve the reliability of electricity supply in Bamako and the technical and commercial performance of EDM.

B. Project Beneficiaries

27. The direct project beneficiaries are all new and existing electricity consumers located within EDM’s concession area. These include: (i) residential households; (ii) commercial consumers; and (iii) industrial customers. As the project will connect new households within the selected areas, these customers as well as the existing ones, will benefit from safe and reliable electricity services, as a result of EDM’s improved performance and strengthened transmission and distribution infrastructure.

C. PDO-Level Results Indicators

28. Progress toward achieving the PDO will be measured by the following project outcome indicators:
   - Reduction of EDM expenses (percentage)
   - Increase of EDM revenue (percentage)
   - Collection rate of domestic customers (percentage)
   - System losses in project area (percentage)
   - People provided with new or improved electricity services (number) (Corporate Results Indicator), of which women (%)

29. Intermediate indicators
   - Power outages per year in substations rehabilitated by the project (number)
   - Collection rate of central administration and government entities (percentage)
   - Transmission and distribution lines constructed or rehabilitated under the project (km)
   - Transformer Capacity Installed under the project (MVA)
   - Substations (HV/MV) constructed, rehabilitated or expanded under the project (number)
   - People provided with access to electricity services under the project by household connections (grid) (number), of which women (%)
   - Customer call center installed and operational (yes/no)
   - Project related grievances registered under the project grievance redress mechanism (GRM) and addressed (percentage)
I. PROJECT DESCRIPTION

A. Project Components

30. **The project will support the reform program of the utility, address management improvement challenges and support the Government in sector planning.** The project consists of four complementary components for a total of US$ 150 million: (i) Component 1. *Improvement and expansion of transmission and distribution* (US$ 97 million). The activities envisaged are the rehabilitation, the reinforcement, and the expansion of the transmission and distribution network to reduce technical and commercial losses, improve the quality of supply, and increase access to electricity services, (ii) Component 2. *Capacity Strengthening and Technical Assistance* (US$ 20 million). The objective of this component is to strengthen the capacity of EDM’s for day to day operations and to provide targeted technical assistance to EDM and other sector agencies. (iii) Component 3. *EDM Governance improvement and support to the implementation of the EDM Restructuring Plan* (US$ 30 million). The objective of this component is to support implementation of key actions under the EDM restructuring Plan, namely the EDM’s management improvement plan and the improving of the fuel delivery and storage system, and (vi) Component 4. Operational Support (US$ 3 million). The component will provide support to the implementation of Citizen Engagement (CE) and the project management activities of the Project Implementation Unit. To ensure that actions important for achieving the results of component 3, disbursements of component 3 will be made conditional to the completion of the disbursement linked Indicators (DLIs). These DLIs are determined to be necessary steps towards achieving the PDO, which would not be achieved through the financing of inputs alone. Components 1, 2 and 4 follows the regular reimbursement mode based on statements of expenditures after the completion of activities. A detailed description of the project is provided in Annex 1.

**Component 1: Improvement and expansion of transmission and distribution (IDA US$ 97 million equivalent)**

31. **The objective is to improve transmission and distribution infrastructure of EDM.** The rapid growth of the demand has overloaded the transmission and distribution network. The transmission lines are overloaded and the transformers in key substations are congested due to their limited transit capacity and flexibility. Thus, the technical losses are high, and the reliability of the system is poor. This component is designed to reinforce and expand the transmission and distribution network to address the congestion and increase its ability to meet growing demand. The activities envisaged include (i) the construction of a transmission loop, the construction, the rehabilitation and the upgrade of the HV/MV substations, and (ii) the extension of the MV and LV (low voltage) network for the connection of 25,000 new customers.

**Sub-component 1.1: Construction of transmission line, Construction/Rehabilitation/Upgrade and Expansion of HV/MV Substations, Construction of MV Network (IDA US$ 91 million equivalent).**

32. **For the transmission line, the objective is close loop of the existing 150 kV lines of the city of Bamako (looping)** by the construction of the 150 kV Balingue - Darsalam - Lafia double circuit lines. The sections of the cables could be increased to allow the transit of a more power, the reduction of losses. The looping and the doubling of the line will ensure greater reliability of the supply of electricity. The exact line route of the Balingue – Darsalam will be known at the completion of the feasibility studies.
33. **In this sub-component, the main substations in Bamako will be rehabilitated.** The existing switching equipment will be renewed, the capacity of the substations will be upgraded, the 15-kV metal-clad switchgears will be replaced as well as the Substation Control System (SCS). A new 150/30/15 kV substation will be constructed between the existing substations and two new 30/15 kV substations will be built. The rehabilitation will consist in the replacement of obsolete critical substation equipment such as breakers, switches, auxiliaries and power supplies, protection and control equipment. Where necessary, civil works will be performed to secure the equipment and the operators. To upgrade the system, higher capacity transformers and capacity banks will be installed with the objective of increasing the transit capacity and reduce technical losses. In the 30-kV system, higher capacity cables will be installed in place of the existing cables in selected portions of the network. This sub-component will also support the rehabilitation, strengthening and extension of Bamako’s 15 kV network through: (i) the creation of direct links (two 30 kV link and one 15 kV link) to improve the reliability and flexibility of operation, provide N-1 capability and reduce technical losses; (ii) the construction of 15 kV feeders to reduce the load and the system losses; (iii) increase the section of existing 15 kV feeders to increase the transit capacity; and (iv) extending existing 15 kV feeders to serve new loads and increase access. The substation to be rehabilitated and the exact location of the new substations will be known after the completion of the feasibility study which is ongoing.

**Sub-component 1.2: Expansion of the Network and connection of new households (IDA US$ 6 million equivalent).**

34. **This activity is focused on the construction of new distribution infrastructures such as substations, MV feeders, MV/LV transformer stations, LV lines, and the connection of new households.** The construction of a new 30/15 kV substations is envisaged in areas where the load has increased significantly with objective to bring the supply closer to the consumers and reduce technical losses. New feeders will be installed to integrate the new substations into the existing system and ensure redundancy, thus increasing the reliability. Feeders will also be installed to supply new consumers in the peri-urban areas of Bamako. To increase the number of new consumers, new MV/LV transformer stations, LV lines will be installed and 25,000 new connection equipment (including prepayment meters) will be acquired and installed. As the high connection fee is a barrier for new consumers, it is envisaged that the new consumers will pay upfront only 20 percent of the connection and the balance will be spread over at least 12 months on their electricity bills. The feasibility study will determine the locations of each equipment.

**Component 2- Capacity strengthening and technical assistance (IDA US$ 20 equivalent)**

The objective of this component is to strengthen the capacity of EDM for day to day operations and to provide targeted technical assistance to EDM and other sector agencies. This support will be subdivided into two sub-components:

**Sub-component 2.1: Capacity Strengthening (IDA US$ 15 million equivalent)**

35. **This sub-Component will support activities related to the Strengthening the day to day operations of EDM.** This sub-component will support implementation of EDM’s information infrastructure under its Information Master plan. The sub-component will finance the acquisition and installation of software (planning and design software, operation and maintenance software), various equipment (underground fault detection vehicles and tools, security and operation/maintenance equipment) and logistics (vehicles for the operation/maintenance, heavy load trucks equipped with cranes), so as to
improve the planning and the operation/maintenance of the network. This subcomponent will also finance the procurement of the logistics (vehicles, motorcycles, etc...) required to improve the customers management.

**Sub-component 2.2: Technical assistance (IDA US$ 5 million)**

36. **Under this sub-component, the sector planning capacity of the Ministry of Energy and EDM will be strengthened.** The sector planning capacities of the Ministry of Energy will be strengthened (including tools, equipment and training). This sub-component will also support the Ministry of Finance, the Ministry of Energy and EDM to prepare and implement the reduction of the electricity consumption for central government and government’s entities. On an as-required basis consultant will be hired to provide support to the Ministry of Energy on strategic sector issues. Consulting firms will be hired to help EDM prepare the technical studies and the environmental and social safeguard studies, supervise and monitor the construction works that will be executed through component 1.

**Component 3 - EDM Governance Improvement and support to the implementation of the EDM Restructuring Plan (US$ 30 million of which 100% is allocated for DLIs )**

This component partially complements the achievement of the energy prior actions under the proposed DPF (P167547). The component will finance key actions under the EDM restructuring Plan, namely, the EDM’s management improvement plan and the improving of the fuel delivery and storage system: Specific activities include: (i) the extension of the existing revenue protection program which targets EDM’s 6000 large consumers which represent 40 percent of the total revenue; (ii) the update of the customer database and the development of a Geographic Information System (GIS) to enhance the geographical localization of EDM customers; (iii) the improvement of the reliability and the capacity of the customer management and billing system, including the platform for the management of prepaid meters; (iv) the audit of meters to ensure appropriate measurement of technical and commercial losses; (v) the preparation of the least cost plan, RE strategy and update of the least cost plan in the outer years of the project; (vi) the audit the fuel delivery system and the installation of the recommended monitoring actions; and (vii) the increase of the fuel storage capacity of EDM by the construction of new fuel storage facility. The proposed DLIs are:

- **DLI 1 Fuel Monitoring and Storage.** Target will be met if a monitoring system is installed to track the fuel consumption and the fuel storage facilities are constructed.
- **DLI 2 Revenue Protection Program.** Target will be met if a revenue protection program is prepared and implemented.
- **DLI 3 Improvement of Energy Mix.** Target will be met if the methodology to update the least cost generation is approved, the RE strategy is prepared and adopted and the existing PPAs are optimized.

**DLIs Corresponding Certifiable Amount and Timing**
Component 4 - Operational support (IDA US$ 3 million)

37. This component will support activities related to the integration of citizen engagement (CE), improved customer engagement and the project management activities of the Project Implementation Unit (PIU) during the implementation period.

38. The CE activities focus on short-term and medium-term feedback mechanisms that will support restoring and improving electricity services, given the importance of quality and reliability of services for building trust among beneficiaries. A multiple uptake grievance redress mechanism will be developed targeting: (i) residential households; (ii) commercial consumers; and (iii) industrial customers. As new households will be connected within the selected areas, specific outreach and two-way communication activities will be put in place to ensure that these customers as well as the existing ones have access to multiple uptake locations and channels. In addition, the project will support the establishment of a back-office structure to close the feedback loop and ensure timely resolutions and feedback to citizens’ queries and complaints. Project midterm consultations with a sample of citizens from each beneficiary group or residents will be planned to inform the project implementation and launch corrective measures based on consumers’ feedback. As demonstrated by global experience, CE activities will contribute to improving the performance of the EDM and will help strengthen residents trust thereby, indirectly impacting collection rate.

39. Project management activities supported under the project include: (a) the recruitment of dedicated fiduciary, safeguards, and technical advisory staff; (b) oversight of implementation of the environmental and social safeguards instruments for the investments; (c) annual DLI and Technical audits, external project auditing; (iv) training; (v) office supplies and vehicles for project supervision; and (d) part-time consultants as needed. The component will also reinforce the participation of the project beneficiaries during project implementation and beyond. Specific activities to be financed include: (i) communication and consultation with direct beneficiaries; (ii) community monitoring through the deployment of an ICT based solution as well as stakeholder training; and (iii) costs related to grievance redress mechanism.
40. Project management support will include financing for ad-hoc technical assistance through individual consultants to support the PIU, envisaged to include, but not limited to, consultants to provide technical support and assist with project and procurement management, contracts management, safeguards management and financial management. The operating budget will support ad-hoc technical assistance and the day-to-day operations of the PIU and may include the preparation of the annual financial audits, cost of communications, translations, meetings, local travel, consumables and day-to-day office maintenance and administration.

41. Annual DLI audits will be procured through consultants, and maybe the same consultants engaged for the annual technical audit. The objective of the DLI audit will be to review whether or not the projects DLIs are being met. The DLI process and the proposed DL indicators and results are described in Annex 2.

42. Annual technical audits will be procured through consultants. In general, the objective of the technical audits will be to review the planning, design, construction and management of the maintenance works. Although the audits will be done annually, not all sites (contracts) will be audited each time, but the audits will be planned progressively across the network, so as to ensure that each maintenance contract is reviewed at least twice across the project implementation period. The audits will extend to evaluating the appropriateness of the specifications and standards applied.

Prior to completion, the project will also finance a comprehensive completion and beneficiary impact assessment. This assessment will seek to: (a) document achievements and problems; (b) review and document lessons learnt; (c) document project impacts on beneficiaries; (d) review the achievement of the DLIs and results indicators; and (g) recommend improvements in project design.

B. Project Cost and Financing

43. The proposed financing instrument for the proposed project is investment project financing in the amount of US$ 150 million of IDA credit, including taxes and contingencies. The GoM’s contribution is estimated at US$1 million for the implementation of the Resettlement Action Plan and the operationalization of the implementation unit. The summary of project costs and sources of is presented in the table below.
E. Implementation

Institutional and Implementation Arrangements

44. **EDM will be responsible for the overall coordination and the implementation of the project.** The Ministry of Energy and Water will be technically responsible for the sector reform activities and EDM will be responsible for the fiduciary aspects of these activities. A Project Implementation Unit (PIU) will be created within EDM and will oversee the management and implementation of this project. The PIU will not have any other operation responsibility in EDM apart from management and the implementation of projects. The PIU team will include a project coordinator (director level), a procurement specialist, a financial management specialist, an evaluation and monitoring specialist, technical experts (engineers), an environmental specialist and a social development specialist. A Department of project management will be created at EDM and will incorporate the PIU. The department will be under the responsibility of the Directorate General of EDM and will have the responsibility of the overall implementation of the project on a day-to-day basis. The staff of the PIU will be composed of externally recruited fiduciary experts (procurement, financial management) and EDM technical staff dedicated to the project. The Ministry of Energy and Water will designate a focal point as the counterpart of PIU within the Ministry. Annual work programs and the budget of the project will be reviewed and approved by a steering committee including officials of the Ministry of Energy and Water, the Ministry of Economy and Finance, the Director General of EDM (or its representative) and CREE (Water and Electricity Regulatory Commission).

45. **An owner’s engineer and contract monitoring will be provided by consulting firms** engaged for the full term of the construction contracts. Primarily, they will assist EDM in approving contractor’s design and the construction ESMP (Environmental and Social Management Plan), monitor the implementation
including the ESMP, administer the contracts, certify payments, assist in commissioning and ensure compliance with existing regulations. Consultant will also be recruited to monitor the implementation of the RAP.

46. **Disbursements and Financial Management.** Disbursement for Component 3 is linked to agreed indicators (DLIs). The borrower therefore provides documentation both that the expenditures have been made and that the indicator targets have been met.

47. **Financial reports on project expenditures will be prepared,** along with updated cash flow forecasts and contract management information on a semi-annual basis and will be submitted to the Bank for review and acceptance. Loan advances will be converted into disbursements when expenditures reported are reviewed and accepted as eligible, and when the Bank have validated and certified that DLI targets have been met.

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

This project will be implemented in Bamako located on the banks of the Niger River in a valley surrounded by hills and cover 267 km². This valley is crossed by some streams and ponds that throw in the Niger River. The electricity transport line which will be rehabilitated cross at some part, toward the Niger river. The vegetation of Bamako is characteristic by the succession of the anthropized and natural vegetation. The most important vegetal ecosystem in the city is a classified forest, of Koulouba which covers an area of 2,010 ha. This forest contains a national park and is dominated by the hill of Koulouda on which is built the presidential palace of the country. Electrical line construction work has to consider the existence of this classified forest. On climate plan, Bamako is in the third part of countries constituted by the regions of Kayes, Koulikoro, Segou and Sikasso with the tropical savanna climate with 600 to 1000 min of rainwater per year during rainy season. The temperature varies between 24 and 38 degrees with the month of January as the coolest and that of April as the hottest. During the dry season the energy needs increase, putting pressure on already aging electrical installations. Bamako city is a District with six Communes. The population is around 3.000.000 through these six Communes. With 600.000 inhabitants, the Commune 6 is the most populated and in where the energy need is the highest in the city. Then come Communes 2 and 3, in that they respectively constitute the most industrialized, administrative, and commercial center of Bamako. Indeed, 80% of the industries of the city of Bamako is found in the Commune 2. As for the commune 3, it shelters the two most markets (Dabanani and Dibida) of the city and most of the administrative services. In these municipalities and neighborhood, the need for electric energy is growing either in households or in companies and administrations. If the sites of the lines and transformer stations to be rehabilitated are known, it is not the same for the rest of the works whose sites are not yet defined. The exact locations of some physical investments remain unknown and will be decided with the authorities based on the established criteria including the priorities identified in the electricity development plans and the expressed needs of the communities.
## G. Environmental and Social Safeguards Specialists on the Team

Mahamadou Ahmadou Maiga, Social Specialist  
Tolidji Blaise Donou, 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 project will finance the construction/reinforcement of electric transport line the 150 kV. These activities will induce environmental and social concerns during their construction, exploitation (maintenance) and at the end of their lifecycle (electronic and electric waste). Further, some civils works during the construction of new distribution infrastructures such as substations, MV feeders, MV/LV transformer stations, LV lines, and the connection of new households will induce adverse environmental and social impacts in a densely populated city like Bamako. As the exact locations of the activities remained unknown, the framework approach is applied. A ESMF was prepared approved by the Bank and disclosed in the country and on Bank web site.</td>
</tr>
<tr>
<td>Performance Standards for Private Sector Activities OP/BP 4.03</td>
<td>No</td>
<td>This policy is not triggered as there will not involve Private sector as indicated in this policy.</td>
</tr>
<tr>
<td>Natural Habitats OP/BP 4.04</td>
<td>Yes</td>
<td>The OP 4.04 is triggered out of precaution as the right of way of the transport line may impact some critical natural habitats which must be avoided, as per the ESMF. Some endangered species (according to Malian regulation) such as Parkia biglobosa and Khaya senegalensis are encountered in the greater Bamako area and its surroundings, according to the ESMF. The ESMF mentions a large Bird Conservation area between Bamako and Koulikoro (Zone d’Importance pour la Conservation des Oiseaux-ZICO) According to BirdLife International. The endangered Amaranth of Koulikoro, an endemic bird species, was also identified in the ZICO. The PIU will</td>
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<tr>
<td>OP/BP</td>
<td>Yes/No</td>
<td>Description</td>
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<tr>
<td>Forests OP/BP 4.36</td>
<td>Yes</td>
<td>Prepare a full assessment of the project impact on the natural habitats before civil works start and relevant measures will be proposed including those to be implemented by the contractors. The project will not invest in forest logging activities, nor induce large scale forest areas degradation. Nevertheless, this policy is triggered since the construction of power lines can potentially induce the cutting of trees along the right of the way and encroach the Koulouba classified forest in Bamako. The ESMF will be used to screen project activities and design and take specific mitigation measures to avoid any threat on the forest including when needed the reafforestation in areas when trees will be cut.</td>
</tr>
<tr>
<td>Pest Management OP 4.09</td>
<td>No</td>
<td>The project comprises no activity which may induce the purchase and use of pesticides or related chemicals. The project will not finance pesticides acquisition or distribution.</td>
</tr>
<tr>
<td>Physical Cultural Resources OP/BP 4.11</td>
<td>Yes</td>
<td>Although no evidence of significant physical cultural resources or sacred sites/resources in the project intervention area can be certified, some civil works (e.g. construction/rehabilitation) may reveal uncovered artifacts since the country is covering ancient kingdom areas. The chance find procedure is recommended in any civil work contract to be signed under the project.</td>
</tr>
<tr>
<td>Indigenous Peoples OP/BP 4.10</td>
<td>No</td>
<td>There are no indigenous peoples in Bamako, the project area.</td>
</tr>
<tr>
<td>Involuntary Resettlement OP/BP 4.12</td>
<td>Yes</td>
<td>This policy is triggered because activities under component 1 may require some land acquisition leading to the involuntary resettlement of people and/or restrictions of access to resources or livelihoods. As the exact locations of activities are not yet known a RPF was prepared and reviewed by the Bank. The final version was disclosed in the country and at the Bank website. Specific RAP will be prepared, consulted and disclosed once the exact locations are known.</td>
</tr>
<tr>
<td>Safety of Dams OP/BP 4.37</td>
<td>No</td>
<td>The project will not finance dam or dam-related investments.</td>
</tr>
<tr>
<td>Projects on International Waterways OP/BP 7.50</td>
<td>No</td>
<td>The project will not draw water from international Niger river, the water flowing through the city, and will not finance water resources use activities. But the electricity transport line which will be</td>
</tr>
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</table>
rehabilitated cross at some part, toward the Niger river.

Projects in Disputed Areas OP/BP 7.60 No This project is not being implemented in any 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 project works consist in the rehabilitation and reinforcement of the 150 kV high voltage electrical lines Balingue - Darsalam - Lafia double circuit lines, and to possibly reinforce the existing 150 kV links by a second circuit between Balingue - Sirakoro and Kodialani-Lafia. The exact line of the Balingue - Darsalam will be known following the completion of the feasibility studies. Thus, the definition of the corridor of the line will cause impacts on physical resources of the environment and the goods of the populations settled in the sectors concerned. The new route of the line is on 23 km of high-voltage electrical line 150 kV, medium and low voltage and 2 substations. The project will also support rehabilitation activities that will be selected during the first years of the project after the completion of the feasibility studies. This activity will include the production of hazardous waste in a densely populated urban environment that is the city of Bamako. The construction of 5 transformer substations, 2 of which will be reinforced and 3 to be built on sites that are not yet known, will have impacts on the environment and on the population. Indeed, the movements of transport vehicles of construction and electrical materials will cause disruption of traffic around construction sites and potentially throughout the roads in Bamako. Excavations, and embankments will destroy the soil balance and the original miro ecosystems; and have impacts on the normal development of economic activities of neighboring populations. The risks of water pollution in the used oils and other toxic products taken into account in the renewal or installation of electrical equipment could be also other important impacts. Involuntary resettlement of populations as a result of the works remains a substantial social risk of the project in a context of crowded urban areas. Although the project activities will induce land acquisitions that will not imply physical displacement, it is anticipated that the project activities will lead to economic lost. For such activities, a Resettlement action Plan will be prepared and implemented prior to the beginning of civil works.

But, the implementation of the project will improve the distribution of electrical energy in the city of Bamako. Households, utilities and industrial units will have a better energy supply, which will certainly have a positive impact on the city’s economy. Jobs will be created for local people and therefore an improvement in their standard of living.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The indirect impacts of the project relate to the positive effects of improved availability of electrical energy. Indeed, the better availability of energy can help reduce the pressure of populations on natural resources, particularly plant resources. Electric energy can be used to replace the energy wood and coal currently used in the city of Bamako. Electric cooking means can be used in place of current cooking stoves that require wood as cooking energy. In doing so, pressures on natural resources will decline.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Following the Environmental and Social Impact Assessment, and other technical studies on the field, alternatives will
be identified and their usage will be determined.

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.

The borrower prepared:
- Environmental and Social Management framework (ESMF);
- Resettlement Policy Framework (RPF) because the exact locations are unknown.

Those were approved and disclosed in-country and at the Bank website.

Institutional Capacity Assessment: The Borrowers institutional capacity to implement the project under the OP is considered weak even though they have not previously implemented Bank-financed projects. During preparation, an environmental and social due diligence of the institutional arrangements will be carried out to assess any gaps in capacity. A thorough Institutional Capacity Assessment in compliance with the World Bank guidance will be conducted prior to appraisal. Any capacity gaps/ strengthening measures especially with regard to the implementation of the safeguards policies will be captured in an Institutional Capacity Strengthening Plan and reflected ESMF and RPF.

Staffing: Despite the lack of the Institutional Capacity Assessment, the PIU will ensure that a full-time environmental safeguard specialist and a Social Development Specialist are hired during the early implementation period of the project to lead the implementation of OP/BP 1 Environmental Assessment, Involuntary Resettlement OP/BP 4.12. The Social Specialist will be responsible for monitoring the preparation and implementation of GBV risk mitigation measures and the operation of the GRM.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The key stakeholders of the project are:
- The Ministry of Energy and Water will be technically responsible for the sector reform activities and
- EDM (Electricité du Mali) will be responsible for the fiduciary aspects of these activities
- The Ministry of Environment, sanitation and sustainable development
- CREE (Water and Electricity Regulatory Commission)
- Civil society represented by Consumer Association and local ONGs
- The prefect and mayors of the communes of Bamako.
- The religious leaders and the communities representatives

B. Disclosure Requirements

<table>
<thead>
<tr>
<th>Environmental Assessment/Audit/Management Plan/Other</th>
<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></td>
<td>15-Mar-2019</td>
<td>10-May-2019</td>
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"In country" Disclosure
Mali
09-May-2019

Comments

Resettlement Action Plan/Framework/Policy Process

<table>
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"In country" Disclosure
Mali
09-May-2019

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?
No

OP/BP 4.04 - Natural Habitats

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

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?

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?  
Yes
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?

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

Does the project finance commercial harvesting, and if so, does it include provisions for certification system?

**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?  
No
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?
No

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

CONTACT POINT

World Bank

Franklin Koffi S.W. Gbedey
Senior Energy Specialist

Borrower/Client/Recipient

Ministère de l'Economie et des Finances

Implementing Agencies

Energie du Mali - S.A
Amadou Diarra
Directeur Général
Amdiarra@edm-sa.com.ml
**FOR MORE INFORMATION CONTACT**

The World Bank  
1818 H Street, NW  
Washington, D.C. 20433  
Telephone: (202) 473-1000  

**APPROVAL**

<table>
<thead>
<tr>
<th>Task Team Leader(s):</th>
<th>Franklin Koffi S.W. Gbedey</th>
</tr>
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<tbody>
<tr>
<td>Approved By</td>
<td></td>
</tr>
<tr>
<td>Safeguards Advisor:</td>
<td>Hanneke Van Tilburg</td>
</tr>
<tr>
<td>Practice Manager/Manager:</td>
<td>Charles Joseph Cormier</td>
</tr>
<tr>
<td>Country Director:</td>
<td>Michael Hamaide</td>
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