@#&OPS~Doctype~OPS^blank@pidaprcoverpage#doctemplate

Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 30-Jan-2025 | Report No: PIDIA00778

Public Disclosure Authorized

BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Mauritania	WESTERN AND CENTRAL AFRICA	P179383	Development of Energy Resources and Mining Sector Support Phase 1 Project
Financing Instrument	**Estimated Appraisal Date**	**Estimated Approval Date**	**Practice Area (Lead)**
Investment Project Financing (IPF)	03-Feb-2025	27-Mar-2025	Energy & Extractives
Borrower(s)	**Implementing Agency**		
Ministry of Economy and Finance	Ministry of Energy and Petroleum, SOMELEC		

Proposed Development Objective(s)

To enable renewable energy and mineral resource investments and increase reliability of the power sector

Components

Development of energy and mineral resources
Foundations for the Energy Transition

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	Yes
Is this project Private Capital Enabling (PCE)?	Yes

SUMMARY

Total Operation Cost	**82.60**
Total Financing	**82.60**
of which IBRD/IDA	**82.60**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Development Association (IDA)	82.60
IDA Credit	67.50
IDA Shorter Maturity Loan (SML)	15.10

Environmental And Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

1. Since 2008, Mauritania has maintained a stable political environment, distinguishing itself in a region marked by instability. Regular elections since 2010 have reinforced this stability, with the ruling party securing an absolute majority in the 2023 and 2024 elections, and President Ghazouani's mandate renewed. Despite improvements in civic rights and governance, Mauritania faces significant economic, social, and environmental challenges. Economic growth has been inconsistent, averaging around four percent over the past decade, below the national target of 6.5 percent. The poverty rate has decreased, but unemployment remains high, particularly among youth and women. The country's vast, arid geography and challenging climate hinder infrastructure development, further constraining economic potential.

2. Mauritania's renewable energy, minerals, and green hydrogen development present promising opportunities for sustained growth and acceleration of the energy transition towards a low-emissions economy. The country's coastline and sparsely populated territory are ideal for solar and wind energy, though only a fraction of these resources have been developed. The potential for energy exports, including green hydrogen, has attracted international investors. Mauritania's extensive mineral deposits, particularly iron ore, have been a cornerstone of economic development. However, the high cost of capital, the need for coordinated infrastructure investments, and the necessity of achieving large-scale off-take in industrial clusters and load centers are significant obstacles. For this reason, a reliable and extensive national power grid is a crucial precondition for the energy transition. The

Development of Energy Resources and Mining Sector Support (DREAM) project aims to address these challenges and drive an ambitious energy transition in Mauritania. The draft Country Partnership Framework (CPF 2025-30)[1] for Mauritania identifies "more and better jobs" as the first out of four selected CPF Outcomes. The energy and mining industries are identified as strategic sectors to stimulate private sector investment and job creation through direct and economy-wide benefits. The CPF envisions that joint interventions by IFC, MIGA and IDA can provide the necessary policy advice and technical and financial support to accelerate investment in productive assets for sustained and diversified economic growth.

Sectoral and Institutional Context

3. One of the world's largest producers of iron ore, Mauritania has substantial reserves that can support production expansions for decades. The country also has significant gold and copper reserves, and there is potential for other critical minerals like graphite, nickel, cobalt, lithium, platinum, palladium, and vanadium. The national mining company, Société Nationale Industrielle et Minière (SNIM), is negotiating with investors for production expansion and downstream processing of iron ore. The International Finance Corporation (IFC) is considering financing investment proposals, which could accelerate the development of the mining sector in alignment with the country's energy transition towards a low-carbon economy. Proper planning could ensure that the energy demands from the mining industry generate the critical mass needed for large-scale, low-cost renewable energy development, benefiting both residential and commercial segments.

4. The mining sector in Mauritania is moderately attractive to international investors, ranking 53 out of 84 jurisdictions in the Fraser Institute Investment Attractiveness Index of 2021. However, the sector faces challenges such as complications in obtaining investment and mineral permits, sector administration, and tax administration. The current legislation requires parliamentary approval for all new license types, causing significant delays. To attract new investors, the regulatory gap in license approval must be addressed, geological knowledge expanded, economic opportunities along the mineral value chain harnessed, and environmental impacts better managed. Artisanal and small-scale mining has expanded rapidly without adequate environmental measures, leading to issues like soil erosion and mercury contamination.

5. Abundant renewable energy resources position the country to become a leading producer of electricity and green hydrogen. The proximity to Europe offers an opportunity for the country to become a significant energy exporter. The EU's Carbon Border Adjustment Mechanism (CBAM) further drives the potential for green hydrogen. The country could produce up to 20 million tons of hydrogen annually, with the Ministry of Energy and Petroleum (MEP) signing four memoranda of understanding (MOUs) for large-scale green hydrogen developments. However, shared public infrastructure like ports, roads, and transmission lines are critical for these investments to be competitive. Preparations are at the pre-feasibility study stage, with final investment decisions (FID) expected around 2030.

6. Legal, institutional, and contractual frameworks must be developed to attract investors to the energy and mining sectors. The perception of the country as an uncertain investment destination and the first-mover risks associated with green hydrogen investments, energy storage technologies necessitate sector reform to establish a predictable investment regime. The recent parliamentary approval of the green hydrogen law and efforts to create a dedicated

[1] Board date scheduled for Q4 of FY25

regulatory agency are essential first steps. A stable legal and regulatory framework will increase the likelihood of successful private and public sector investments in shared infrastructure and productive capacity, establishing a critical green energy ecosystem.

7. The country aims to achieve 50 percent of its energy supply from renewable sources by 2030. As of the end of 2023, the total installed capacity was 615 megawatts, with renewable energy generation already substantial but intermittent. The development of energy storage technologies is essential to fully utilize renewable resources. *Société Mauritanienne d'Electricité* (SOMELEC) is a vertically integrated power utility that owns electricity generation assets[2] and all transmission and distribution networks. The Mauritanian power sector faces financial difficulties despite relatively high tariffs (average of US$18 cents per kilowatt hour [kWh]), due to its persisting dependence on fossil fuels despite considerable renewable energy investments over the past decade, high system losses of around 35 percent, and low collection rate of about 70 percent. The fossil fuel dominated power system is vulnerable to international prices and foreign exchange fluctuations. Human capacity in the power sector is also considered very low and poses a substantial risk to system operations. There is therefore a pressing need for grid stability investments to enable the energy transition from fossil fuels to renewable sources and human capacity development to ensure adequate service delivery and infrastructure sustainability. For this reason, the development of energy storage technologies will be essential if Mauritania is to take full advantage of its renewable solar and wind energy resources in its quest to achieve universal access, i.e. access to electricity for all citizens of Mauritania, in line with Mission 300 – a partnership to connect 300 million people to electricity in Sub-Saharan Africa by 2030 co-led by the World Bank and the African Development Bank.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

8. To enable renewable energy and mineral resource investments and increase the power sector's reliability and sustainability.

9. The proposed PDO-level indicators are as follows:

- 1 GW or above of renewable energy capacity enabled with indirect support through the conclusion of a Green Hydrogen Global Convention Agreement. *Target: 1 by 2030*
- Green Hydrogen Agency legally established. *Target: 1 by 2030*
- Approved mineral licenses per year. *Target: 50 per year by 2030*
- Additional firm reliability capacity for frequency control provided (MW). *Target: 40 MW by 2030*
- Enabled additional generation of existing renewable energy plants (GWh). *Target: 35 GWh by 2030*
- Greenhouse gas emission reductions enabled through energy storage (metric tons of CO2e per year). *Target: 25,000 tCO2e per year by 2030*

[2] With the exception of marginal diesel-run plants in selected rural areas (representing less than 1% of SOMELEC's generation)

D. Project Description

10. The proposed project, in the amount of US$ 82.6 million, aims to facilitate renewable energy, mining and green hydrogen development. The combined hydrogen-mining component (Component A) will lay the foundations for an energy transition towards green hydrogen and sustainable mineral sector management in Mauritania. It is designed to help the Government of Mauritania (GoM) attract the type of large-scale investment which will be required to develop the mining and green hydrogen sector at an economic scale. The project design is closely aligned with the development of Takamoul and El Aouj iron ore investments. In addition, once green hydrogen production comes on stream (beyond the timeframe of the proposed project), these investments could form part of the Mauritanian green steel and direct reduced iron (DRI) value chains. The battery energy storage system (Component B) is delivering a short-term clean and innovative solution to the network instability and power shortage in the country. In addition, Component B will build capacity in use of this new technology in preparation for further deployments in line with the upscaling of off-grid solutions for remote communities as well as on-grid renewable capacity for direct consumption and green hydrogen production.

Component A – Development of energy and mineral resources

11. **This component will build the government's capacity to plan, regulate, and manage the green hydrogen, mining, and electricity sectors**. This support will strengthen policies and procedures, while also capacitating the institutions tasked with regulating and planning energy and mining development.

12. **A1 - Institutional and regulatory framework for the green hydrogen sector.** An entirely new regulatory framework will need to be developed for the green hydrogen sector, to address the range of sector activities from investment approvals over production to sales and final decommissioning. The project will finance requisite regulatory and legal instruments to operationalize sector operations. The green hydrogen law was recently adopted, representing an important step towards ensuring the necessary regulatory certainty demanded by investors. As a core outcome, the proposed project will support the establishment of a green hydrogen agency, Agence Mauritanienne de l'Hydrogène Vert (AMHV), an independent administrative body charged with regulation and sector planning. In addition, the project supports a capacity building element delivering skills development programs to civil servants and staff at existing beneficiary agencies and at AMHV. Formal training programs will be complemented with on-the-job training in good practices of legal, financial, technical, and contractual aspects of green hydrogen. A strategy for gender balanced recruitment processes will be included to promote greater gender equity in the nascent industry.

13. **A2 - Mining sector support.** The project will support performance management of state-owned enterprises and sector agencies as well as oversight and management of investment agreements. Enhanced corporate governance and accountability of SNIM and Maaden will be prioritized through oversight mechanisms such as key performance indicators and scorecard tracking. At a sector-level, the project will address the factors which constrain the approval process of mineral licenses, specifically, it will the modernize the digital mineral licensing system and the geoscientific information systems. Procedures and standards for enhanced management and compliance monitoring of mineral development activities will be updated. These management systems will also cover artisanal and small-scale mining (ASM) operations,

which have grown rapidly over the past decade. The principles of climate-smart mining[3] will be central in the performance monitoring, including water resources and wastewater management, emissions control, bio-diversity preservation, and resilient mine closure planning, including tailings management and revegetation of mined-out areas[4], which are expected to become a prerequisite to maintain access to key export markets for minerals.[5] Moreover, inspection and audit procedures of mining operations will be enhanced through support to cross-ministerial teams and field missions that include sector agencies, as well as tax authorities and the environmental inspectorate. The compliance monitoring systems will also adopt principles of community consultation and citizen engagement in line with regulatory requirements for consultation prior to approval of mineral licenses.

14. **A3 - Training and Local Content.** The project will address the current shortage of workers and technicians with requisite skills in the renewable energy and mining industries. Activities will build on the successful curriculum development and support to technical schools in Nouakchott and Nouadhibou under the Supporting Gas Negotiations Project (Projet d'Appui au Développement du Secteur Gazier, PADG, P163563). Existing programs of mining and hydrocarbon operations will be complemented with programs in the fields of renewable energy and green hydrogen operations. The modernized and expanded curriculum will educate the workforce needed in the future development of the energy and extractive industries and will educate skilled technical workers, such as mechanics, welders, fitters, electricians, surveyors, data analysts and more. Project activities will be designed and implemented under the auspices of the recently established Technical and Vocational Education and Training (TVET) Forum, which brings together government and private sector representatives as well as development partners. A second leg of this subcomponent is local content promotion, capacity building, and facilitation of local businesses, including certification to meet international standards. The project will build on previous SME support programs in the mining sector where local supply and sub-contracting has been promoted as part of IFC and MIGA investments[6]. A crucial part of this activity will be consultation between industry representatives and the education agencies in order to ensure that curriculum design and training outcomes meet the requirements and emerging needs of future employers. This will also include a more gender-balanced workforce. A dedicated scholarship program to encourage female students will be supported to address the financial constraints that are disproportionately affecting female students in Mauritania. The scholarship program will be allocated according to criteria of educational performance, financial need, and social indicators with a tentative ratio of 70 percent to be awarded to female students. Training will be developed to raise awareness of technical, environmental, and social standards that will be required from local businesses to qualify as vendors for green hydrogen, renewable energy, or mining operators. In addition to training the local workforce, awareness campaigns and matchmaking will target Mauritanian expatriates with the professional and sector background to entice repatriation of the skilled workforce.

15. **A4 – Integrated resource and energy transition planning.** To facilitate the sustainable exploitation of multiple natural resources, the subcomponent will support the development of a comprehensive master plan of resource development, including multi-layered digital maps showing natural and energy resources and key infrastructure elements. Furthermore, as described by the G5 Sahel Regional Country Climate and Development Report (CCDR), (P177343), Mauritania is facing multiple challenges related to climate which will impact all infrastructures. In this context, this sub-component will also build synergies between the mining and power sectors in a climate-challenging environment,

[3] Climate-smart mining is based on the four principles of (i) decarbonization of operations, (ii) building resilience of physical and natural assets, (iii) promoting a circular economy, and (iv) market opportunities related to low-emission technologies.

[4] The total investment in environmental compliance systems is estimated at US$ two million.

[5] One notable example is the planned Carbon Border Adjustment Mechanism in the European Union

[6] The Tasiast gold mine, operated by Kinross

including through an assessment of water supply options and desalination technologies.[7] Other studies on adaptation and resilience in both power and mining sectors will be commissioned to evaluate the risks related to flooding, geo-hazards caused by erosion, extreme heat and others linked with climate change[8]. In combination with sub-component A2, these activities will enhance the resilience of the mining industry and associated infrastructure against climate and disaster risks.

16. **A5 – Project Management in the MEP.** The Project Implementation Unit (PIU) established for the PADG project (closed in March 2024) will be re-deployed for the implementation of the activities listed under Component A. The implementation tasks include project coordination, procurement, financial management, environmental and social compliance as well as monitoring and evaluation.

Component B – Foundations for the Energy Transition

17. This component will support SOMELEC's development of the nation's first battery energy storage infrastructure to enhance national grid stability and renewable energy integration. Activities will be implemented by SOMELEC and comprise the following sub-components.

18. **B1 – Battery energy storage system (BESS) for grid support.** This subcomponent will support the supply, installation, and initial operation of a centralized BESS in Mauritania, including ancillary infrastructure related to transmission grid reinforcement, owner's engineering, and an initial operations and maintenance (O&M) contract of three years to secure infrastructure durability given the inherent technological innovation. After that time, SOMELEC's in-house capacities are expected to have developed to maintain and expand the battery facilities. This infrastructure will improve the power system's stability and allow full absorption of the intermittent wind and solar capacity, which, at present, is already installed but only partially fully utilized. Hence, installing the BESS will also increase the share of renewable energy in the country. The proposed 70 MWh BESS (35 MW with two-hour storage) will be located in Nouakchott near the existing Duale Power Plant. The feasibility study, technical specifications, tendering documentation, and environmental and social instruments were prepared in advance through the Mauritania Energy Transition Acceleration (META) Technical Assistance, P179383). The subcomponent's high readiness level is expected to facilitate an expedited activity implementation and early disbursements for the project. The BESS will include dedicated cooled buildings to protect the infrastructure against climate hazards (heatwaves, sandstorms, etc.) and will enhance the overall resilience of the Mauritanian power sector as well as the operations of all consumers by avoiding power outages and by providing a secondary and stabilizing source of power during climate events. Doing so will ensure resilience of and through the project.

19. **B2 – Institutional strengthening.** This subcomponent will support capacity strengthening of energy sector institutions, including SOMELEC, MEP, and the Regulatory Authority with a view to a gradual expansion of renewable energy resources in the SOMELEC-operated power network. In combination with other Bank-supported projects, the capacity building activity will also enhance the financial and operational sustainability of SOMELEC in the short, medium and long term. It will facilitate the design and implementation of key planning, strategy and regulatory frameworks, including those on social, environment, climate and gender. This subcomponent is critical to ensuring that adequate capacity is maintained throughout the duration of the project and beyond to facilitate successful implementation and sustainable operation of the investments. Furthermore, the component will help SOMELEC's staff to better manage

[7] The water supply assessment is estimated at US$1 million.

[8] Total cost: US$1.7 million

system-wide power generation (curtailment and flexibility of use in times of crisis) and transmission (voltage and frequency stabilization) both in normal and contingency times, while allowing Mauritania's civil servants to integrate additional RE capacities into the grid.

20. **B3 – Project management in SOMELEC.** This subcomponent will support incremental operating costs of the PIU under SOMELEC to manage implementation of Component B from the perspective of technical, fiduciary, social, environmental, and gender skills for effective project implementation.

Component C – Contingent Emergency Response Component

A Contingent Emergency Response Component (CERC) with zero allocation will be created and ready for implementation to allow GoM to respond quickly in case of an eligible emergency.

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

Summary of Screening of Environmental and Social Risks and Impacts

21. The environmental and social risks of the project are considered to be Moderate. The environmental and social impacts and risks of the only infrastructure project subcomponent are limited given the limited size and location of the BESS. An Environmental and Social Impact Assessment (ESIA) for the BESS subcomponent, near the Duale plant in northern Nouakchott was prepared, reviewed by the Bank, and has subsequently been finalized and publicly disclosed. According to the ESIA, the corresponding potential impacts and risks are considered moderate and are mainly related to occupational health and safety (OHS) and community health and safety. The potential environmental impacts and risks of the lack of an adequate disposal site for hazardous waste in the country and the cumulative impacts with SOMELEC's thermal electric plant in the vicinity of the BESS are also matters of concern that were addressed in the final version of the ESIA. The BESS is expected to have limited footprint (1-2 ha) and the land is already identified and acquired by SOMELEC . The site is free from possible encroachment, and not used for seasonal herding. Social risks include labor risks and community health and safety.

E. Implementation

Institutional and Implementation Arrangements

22. A cross-ministerial Steering Committee ("*Comité de Pilotage*") will oversee general project implementation, including annual work plan approvals, regular progress reporting and cross-sectoral planning and coordination. Component A and C of the project will be implemented by the existing PIU at the MEP.. Component B "Foundations for energy transition" will be implemented by SOMELEC ("*Unité de Gestion: SOMELEC*"), the Mauritanian power utility. The

PIUs will include a Project Director and staff covering all key project implementation functions as stipulated in the Financing Agreement and the Project Agreement. While MEP-PIU will report to an inter-ministerial technical committee ("*Comité Technique*"), the SOMELEC PIU will report through existing corporate governance structure ("*Conseil d'Administration*"). Regular fiduciary reporting will be managed separately by each PIU, whereas joint semi-annual progress reporting will be consolidated and submitted to the Bank via the overarching steering committee.

CONTACT POINT

World Bank

Morten Larsen
Sr Mining Spec.

Manaf Touati
Senior Energy Specialist

Martin Oswald
Senior Gas Specialist

Borrower/Client/Recipient

Ministry of Economy and Finance
Sid Ahmed Ould Bouh
Minister of Economy and Sustainable Development
msalemnany@gmail.com

Implementing Agencies

Ministry of Energy and Petroleum
Amanatoullah Ould Ahmed El Karrachi
Project Coordinator
a.ould.ahmed@gmail.com

SOMELEC
Lafdal Dedi
Project Coordinator
lafdal@gmail.com

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: http://www.worldbank.org/projects

APPROVAL

Task Team Leader(s):	Morten Larsen, Manaf Touati, Martin Oswald

Approved By

Practice Manager/Manager:	Robert Schlotterer	17-Jan-2025
Country Director:	Ibou Diouf	30-Jan-2025