



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 21-Mar-2024 | Report No: PID177



BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies) Mauritania	Operation ID P179383	Operation Name Development of Energy Resources and Mining Sector Support Phase 1 Project	
Region WESTERN AND CENTRAL AFRICA	Estimated Appraisal Date 26-Aug-2024	Estimated Approval Date 27-Nov-2024	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing (IPF)	Borrower(s) Islamic Republic of Mauritania	Implementing Agency Ministry of Petroleum, Energy and Mines	

Proposed Development Objective(s)

To support the Government of Mauritania leverage its energy and mineral resources for low-emissions economic development.

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	141.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	41.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	100.00
IDA Credit	100.00



Environmental and Social Risk Classification

Moderate

Concept Review Decision

The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **The Islamic Republic of Mauritania has enjoyed a stable political environment since 2008 but has yet to realize its full economic potential.** Located in an increasingly unstable region, Mauritania stands out as a relatively stable country with regular elections since 2010. Despite the progress made in recent years, the country still faces economic, social, and environmental challenges that impact its resilience and increase its vulnerability. Annual economic growth has been uneven over the past decade at an average rate of around four percent which is markedly inferior to the target of 6.5 percent as stated in the national strategy for accelerated growth and shared prosperity (SCAPP)¹. The poverty rate (using the national poverty line) declined from 51 percent in 2000 to 31.8 percent in 2019, but unemployment remains high, at 11.1 percent². The figure of un- or underemployed youth is reported to be decidedly higher. Mauritania's challenging geography and climate are key constraints to its economic potential since its vast and arid land mass of just over one million square kilometers offers few opportunities for economic development. Long distances and a challenging climate inhibit road, electricity and water supply. Moreover, a taxing business environment is constraining productivity due to a high level of bureaucracy, and limited access to finance and skilled workforce. Despite these challenges, the country's 754 km of coastline and its vast and sparsely populated territory provide favorable conditions for renewable energy from solar and wind. This means that there is a great potential for green energy and green hydrogen development. This has sparked early interest from potential private sector investors. In sum, renewable energy, minerals, and hydrogen development present some of the most promising opportunities for sustained growth.

Sectoral and Institutional Context

2. **Mauritania is actively pursuing an accelerated energy transition to meet its national climate change objectives while capitalizing on the economic opportunities of the low-carbon economy through various pathways.** First, the country is on track to meet the objective of 50 percent renewable energy supply in the power grid by 2030. Second, five Memoranda of Understanding have been signed with prospective developers of green hydrogen projects which would supply domestic energy demands and generate substantial export revenue from sale of green hydrogen or ammonia. Third, several mineral development projects are exploring opportunities to expand the domestic processing facilities for smelting, steel-making and other energy-intensive processes on the back of renewable energy sources. If successful, this would be an opportunity to become a leading energy exporter. The EU's Carbon Border Adjustment

¹ Stratégie de Croissance Accélérée et de Partage de la Prospérité (<https://faolex.fao.org/docs/pdf/Mau190616.pdf>)

² ILO estimate, 2022



Mechanism (CBAM) and its potential impact on carbon-based imports is an additional instigator for green hydrogen and products derived from it.

Hydrogen

3. Estimates suggest that Mauritania could produce up to 12 million tons of green hydrogen per year. Various investors have commenced detailed feasibility studies which could lead to the first hydrogen production in the middle of the 2030s. Notwithstanding, legal, regulatory and contractual frameworks must be developed before investors are willing to make the final investment decision. The general investor perception of Mauritania as an uncertain destination for investment, combined with the first-mover risks associated with hydrogen investments, means that sector reform to establish a predictable investment regime is a priority. Notably, parliamentary approval of the hydrogen code (currently in draft) and strengthening of regulatory agencies are considered imperative for investors to make the required financial commitment. Beyond a stable legal, regulatory and institutional framework, substantial private sector investment will be dependent on access to domestic and international markets and development of shared infrastructure (ports, roads, railway lines, etc.)

Mining

4. **Mauritania is one of the world's largest producers of iron ore, with large proven reserves to sustain current production rates for more than 100 years.** Gold and copper reserves are also extracted at industrial scale while other minerals critical for the energy transition such as nickel, cobalt, lithium, and vanadium have been confirmed although further survey work will be needed to confirm commercial viability. Mauritania is considered moderately attractive by international investors, ranking 53 out of 84 jurisdictions surveyed by the Fraser Institute in 2021. Weaknesses are related to complications of obtaining investment and mineral permits, overall sector administration and tax administration. Additionally, the environmental impacts from mining need better management and mitigation to meet the increasing performance requirements from international markets.

Electricity

5. **Renewable energy generation is already relatively substantial, but the intermittent nature of solar and wind power is a destabilizing factor for power system operations.** This is illustrated by the recently inaugurated 100MW Boulouar wind farm which is currently used at around 30 percent of its capacity because of inadequate energy storage and distribution capacity. The Mauritanian power sector is confronted with underinvestment due to financial difficulties of the national utility Société Mauritanienne d'Electricité (SOMELEC) which has traditionally been operating at high generation costs but low collection rate in the order of 70 percent. The fossil-fuel dominated power system is vulnerable to international prices and foreign exchange fluctuations. There is therefore a pressing need for (i) grid stability investments to enable the energy transition from fuels to renewable sources, (ii) investments in digitalization to increase system efficiency, and (iii) human capacity development to ensure adequate service delivery and infrastructure sustainability. The private sector is expected to play a key role in the Mauritanian energy transition. The first critical step towards market reform is the recent adoption of the new Electricity Code, which marks the introduction of Independent Power Producers (IPPs) in the clean energy arena (generation and solar rural electrification). It also enhances transparency through sector unbundling of generation, transmission, and distribution.



Relationship to CPF

6. The proposed project is aligned with the Performance and Learning Review (Report No.170469-MR) of the Country Partnership Framework (CPF) for Mauritania 2018-23 (Report No.125012-MR)³ and is one of the first operations to be delivered within the new CPF under preparation (P505242). The proposed Développement des Ressources Energetiques et Appui au Secteur Minier Phase 1 (DREAM 1) will support GoM leverage its energy and mineral resources for low-emissions economic development – in line with WBG Global Challenge of ensuring an efficient and affordable energy transition. The project aims to achieve this objective through enhanced power system stability, investment promotion, and economic diversification based on hydrogen and mineral development. The project will also promote skills development of the workforce and institutional capacity building of government agencies.

C. Proposed Development Objective(s)

To support the government of Mauritania leverage its energy and mineral resources for low-emissions economic development.

Key Results (From PCN)

7. The proposed key result indicators are:
- Number of hydrogen investments reaching final investment decision.
 - Number of approved mineral licenses per year.
 - Increased utilization of existing renewable energy plants (wind and solar, in GWh)
 - Reduced commercial losses in the national power grid (percentage)
 - Greenhouse gas emission reductions as a result of public renewable energy generation facilitated by the battery energy system.

D. Concept Description

8. **The DREAM 1 is designed as the first phase of a series of projects (SOP)⁴ with the overarching goal to support the country realize its renewable energy and mineral potential for the purposes of economic and social development as well as export revenue generation.** In a 10-year horizon, it is envisioned that the SOP will enable the development of the first hydrogen production and support the acceleration of the energy transition through grid stability and reinforcement as well as private capital enabling for renewable energy generation. The SOP will also facilitate the uptake of renewable energy sources in the mining and processing industry to enhance the competitiveness of Mauritania’s mineral exports in a market where the accountability of a commodity’s climate impact becomes an increasingly important competitive parameter.

Component A - Governance and institutional support

9. This component will build Government capacity in planning and regulatory management of hydrogen, gas, mining, and electricity sectors. The energy transition has introduced a variety of new considerations spanning hydrogen technologies, gas flaring, climate-smart mining and more. This support will strengthen policies and procedures while also capacitating the institutions tasked with regulating and implementing energy and mining development. In the

³ The CPF has been extended while consultations are in progress.

⁴ Currently, the series is expected to consist of two project cycles, each of a duration of five years.



hydrogen sector, an entirely new regulatory framework will need to be developed, from investment approvals over production to sales and eventual decommissioning. The project will also support the establishment of a hydrogen agency, *Agence Mauritanienne de l'Hydrogène Vert* (AMHV), an independent administrative body charged with regulation and sector planning. On-the-job training will be complemented with dedicated training in good practices of legal, financial, technical, and contractual aspects of hydrogen and climate-smart mining development. In the mining sector, the project will address the factors which constrain the approval process mineral licenses. Specifically, the digital mineral licensing system and the geoscientific information systems will require modernization. In the electricity sector, the project will address human capital constraints for operational performance and clean energy private sector participation.

Component B - Negotiation support and investment promotion

10. This component will support development of sector strategies to attract private investment and nurture productive value chains in the hydrogen and mining sectors with the objective to retain a larger share of benefits and employment opportunities in-country. Given the nascent status of the hydrogen industry, a particular focus will be placed on preparing for hydrogen readiness through critical investments with public and private sector capital. The project will build capacity in evaluation and planning of necessary infrastructure investments (such as water desalination facilities, port, rail and road expansion and others) which serve a dual purpose for one or more of the prospective investors and for the general public which can benefit from the same infrastructure.

Component C - Training and Local Content

11. 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 Gas Negotiations and Institutional Capacity Project. A second leg of the local content promotion concerns capacity building and facilitation of local businesses. Training will be developed to raise awareness of technical, environmental, and social standards that will be expected or required from local businesses to qualify as vendors for hydrogen, 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.

Component D - Foundations for the Energy Transition

12. This component is proposed to be structured around two sub-components: (i) grid stability and renewable energy integration, and (ii) operational efficiency enhancement through digital transformation. Combined, these two sub-components are expected to increase power grid reliability and utility creditworthiness vis-à-vis the private sector, with the ultimate objective to pave the way for sustainable and bankable independent power production in Mauritania. The project will finance supply, and installation, and of the first Battery Energy Storage System (BESS) in Mauritania to be located in Nouakchott near the Duale Power Plant. The project will finance the upgrade of the national dispatch center by setting up a renewable energy dispatch center consisting of software and hardware, co-located at SOMELEC's existing national load dispatch center in Nouakchott. Additionally, supply, and installation of advanced metering infrastructure (AMI) for SOMELEC's medium voltage consumers (representing 50 percent of revenue) will be supported.



Component E - Project Management

13. Project preparation and implementation will rely on the existing Project Implementation Unit (PIU) under the Gas Negotiations and Institutional Capacities Project. The PIU operates under the structure of the MPME. The PIU will also manage the planned project preparation facility (PPF). Given the size of the power sector components a dedicated PIU will be hosted at SOMELEC and will build on the structures already in place for the REA-BEST and Moudoun projects.⁵

Component F - Contingent Emergency Response Component

14. 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	
	Last approved	Current
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		

CONTACT POINT

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⁵ Regional Electricity Access and Battery Energy Storage Technology Project (REA-BEST, P167569) and Decentralized and Productive Intermediate Cities Support Project (Moudoun, P169332)



Islamic Republic of Mauritania

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APPROVAL

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