

Virtuitis_DARES (50901)

Project Basic Information

Country: Nigeria	Region: West Central Africa	Project No.: 50901
Project Legal Name: Virtuitis_DARES	Company Legal Name: Virtuitis Solaris Limited	
Project Business Sector: V-BF - Solar - Renewable Energy Generation	Owning Department /Division: Regional Industry - INF Africa	
Environment Category: B		

IFC's Disclosure Requirements

Date of initial ESRS disclosure
11/4/2025

Date of revised ESRS disclosure

Date of clearance by client for factual accuracy
10/23/2025

Board Approval Date

Project Description

Virtuitis Solaris Limited ("Virtuitis" or the "Company"), established in 2018, has contributed to the development of clean energy through the execution of mini-grid projects in Nigeria. In October 2024, Virtuitis was among 22 developers that entered into agreements with the Rural Electrification Agency (REA) for the implementation of distributed renewable energy projects across nine states in Nigeria. To date, Virtuitis has successfully completed seven mini-grid projects as part of the Nigeria Electrification Project (NEP), resulting in 5,517 connections.

The proposed IFC investment consists of a revolving loan of up to USD16.0m to Virtuitis to part finance the company's 4-year capital expenditure plan to construct and operate 97 mini-grids solar sites with an aim to connect 142,343 off-grid consumers by 2027. The mini-grids sites will comprise i) installed photovoltaic (PV) solar power systems with capacities ranging from 50 - 800kWp capacity; ii) lithium battery storage with capacities ranging from 200 - 1,645Wh capacity; iii) diesel generator sets with capacities ranging from 60 - 500kVA capacity; and iv) local low voltage power distribution network without transformers, (the "Project"). The loan shall be secured entirely through an assignment of amounts due to Virtuitis under the World Bank (WB) financed Nigeria Distributed Access through Renewable Energy Scale-up ("DARES") project (disclosed on the WB Website - P179687). The DARES project builds on the achievements of the WB financed NEP, which has supported the establishment of 125 mini-grids and the sale of over a million Solar Home Systems, through which more than 5.5 million Nigerians have gained access to electricity.

Proceeds from IFC financing will only be used for the construction and operation of the 97 mini grids. Land for the mini-grids is acquired in accordance with the procedures set out in the World Bank-approved Resettlement Policy Framework (RPF) developed under the DARES Platform, which serves as a core E&S instrument for projects implemented through this program. The mini-grids will be constructed in villages, on small plots of land ranging from 0.15 hectares up to 10 hectares, acquired through community lease agreements in eight Nigerian states (Plateau, Ondo, Delta, Kogi, Ekiti, Sokoto, Zamfara and Kebbi). Construction at each site is expected to span four months and both construction and operation and maintenance (O&M) will be managed by Virtuitis.

Overview of IFC's Scope of Review

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The review was conducted between April 23rd and May 15th, 2025, through IFC site visits to the company's offices, visits to two operational mini-grid sites, with Environment and Social (E&S) due diligence carried out by an independent consulting firm. The review included i) meetings with Virtutis senior management, including its E&S and Human Resources (HR) management teams; ii) meetings and interviews with site management teams at Dadin Kowa and Fajul, both in Langtang South LGA of Plateau State which are considered representative of the company's portfolio; iii) interviews with select members of the public and clients at the host communities in Langtang South LGA, with an interest in capturing the views of both male and female community members; iv) a review of the company's E&S risk management policies, procedures and plans; and v) E&S screening of the proposed mini-grid sites undertaken by an external consultant.

Identified Applicable Performance Standards

While all Performance Standards are applicable to this investment, IFC's environmental and social due diligence indicates that the investment will have impacts which must be managed in a manner consistent with the following Performance Standards.

PS1-Assessment and Management of Environmental and Social Risks and Impacts
PS2- Labor and working conditions
PS3-Resource Efficiency and Pollution Prevention
PS4-Community Health, Safety and Security

Environmental & Social Categorization and Rationale

This is a Category B project according to IFC's Policy on Environmental and Social Sustainability as environmental and social risks and impacts associated with the project are limited, generally small scale (0.15 hectares to 10 hectares), site-specific, readily addressed through mitigation measures. Key E&S risks and issues associated with the project are: (i) corporate E&S management systems and staffing to manage operations in line with IFC PSs requirements; (ii) adequate E&S screening and assessment for proposed mini-grids; (iii) assurance of fair, safe and healthy working conditions for workers in compliance with Nigerian labor laws and IFC PS2, including the management of contractors workers, solar equipment supply chain risks, and Gender Based Violence and Harassment (GBVH); (iv) occupational health and safety management; (v) air quality, waste water and solid waste management in line with World Bank Group (WBG) Environment, Health and Safety (EHS) Guidelines; (vi) community health and safety risks related to transport and security; and (vi) stakeholder engagement and community grievance management.

Environmental & Social Mitigation Measures

(Observations that are not to be disclosed must be recorded in ESG360)

IFC's appraisal considered the environmental and social management planning process and documentation for the Project and gaps, if any, between these and IFC's requirements. Where necessary, corrective measures, intended to close these gaps within a reasonable period of time, are summarized in the paragraphs that follow and (if applicable) in an agreed Environmental and Social Action Plan (ESAP). Through implementation of these measures, the Project is expected to be designed and operated in accordance with Performance Standards objectives.

Applicable PSs summary

PS1-Assessment and Management of Environmental and Social Risks and Impacts

Environmental and Social Policy and Management System

Virtutis has an E&S Management System (ESMS) that will be updated to follow the guidelines of the DARES Platform E&S Management Framework (ESMF), which has been approved by the World Bank. The DARES ESMF serves as the core E&S assessment and management tool for all projects under the program, providing guidance for E&S performance management during the planning, construction, and operation phases in line with applicable World Bank E&S Standards (ESS). The ESMF is supported by separate instruments, including a Resettlement Policy Framework (RPF), Labor Management Plan (LMP), and Stakeholder Engagement Plan (SEP). As part of this financing, Virtutis will update its existing ESMS to

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ensure full alignment with the DARES ESMF and IFC Performance Standards. This will include (i) having the corporate ESG policy updated to indicate responsible parties for its execution; (ii) updating its management programs to align with IFC PS and national legislation relevant to Virtuitis' operations; and (iii) developing an E&S monitoring and reporting procedure with associated Key Performance Indicators (KPIs) to assess the effectiveness of risk mitigation (ESAP #1).

Identification of Risks and Impacts

Virtuitis, in accordance with the DARES program, screens all potential mini-grid sites for E&S risks and impacts, and exclude all sites that fall within the exclusion criteria. Sites that fall in the exclusion criteria includes projects with footprint: located within protected areas (e.g., national parks, conservation areas, forest reserves); internationally recognized areas; critical natural habitats and where mini grid construction will cause significant degradation of natural habitats (e.g. mangroves); hosting cultural heritage or sacred sites; is under active dispute or litigation; located in environmentally high-risk areas (flood-prone, erosion-prone); belonging to vulnerable groups; or serving as a primary source of livelihood. The site selection and screening process is outlined in the land acquisition - processes and frameworks and Virtuitis ESMS manual, which also details the management of E&S risks and impacts throughout site selection, pre-construction, construction, and operational phases. After site selection, ESMPs are developed, and environmental permits secured in accordance with national regulations before construction begins. These ESMPs include detailed E&S baseline assessments, impact identification, mitigation strategies, stakeholder engagement, and decommissioning plans. Virtuitis has received EIA approval from the Federal Ministry of Environment for 13 mini-grid projects in Plateau State. The low voltage distribution lines are designed to run along the village roads, and their design is compliant with the national technical requirements, hence pose low E&S risk. Additionally, Virtuitis has a risk management policy which covers human resources management and workplace environment and safety.

Land Acquisition: Virtuitis acquired all 97 mini-grid sites to be financed by IFC through community lease agreements. No physical or economic displacement occurred for the leased sites and no outstanding community grievances were reported related to the land lease process. There will be no additional land acquisition for the distribution lines, which will be laid along the existing road servitudes. Similarly, for all future sites to be considered for the mini-grid project, Virtuitis will, as part of its ESMS upgrade, apply site selection criteria that avoid physical or economic displacement, as defined in IFC Performance Standard 5. Should a negotiated acquisition not be achieved, the client will consider alternative sites and not resort to any form of eminent domain.

Management Programs

Virtuitis has established a range of policies, procedures, and plans within its ESMS framework to address E&S risks and impacts related to mini-grid projects. These include a risk management policy, ESMS Manual, HSE plan, land acquisition processes and frameworks, community relations policy, gender equality and social inclusion action plan, waste management plan, biodiversity and cultural heritage considerations, and a grievance redress mechanism. Going forward as per ESAP #1, Virtuitis will update its management programs with the following documents: corporate E&S risk register, emergency preparedness and response plan; supply chain code of conduct; hazardous material management plan; stakeholder engagement plan; traffic management plan; security management plan; chance find procedure; E&S / OHS monitoring and reporting procedure, including KPIs.

Organizational Capacity and Competency

Virtuitis has an organizational structure in place, with personnel assigned to manage E&S risks. These roles include E&S supervisors, a community liaison officer, and security personnel. E&S supervisors are provided with support from consultants for E&S risk management as required. The board of directors provide strategic and oversight role in E&S governance, ensuring that environmental and social risks are properly managed and aligned with institutional goals. Considering the expected surge in sites under construction due to this program and the expected increase in the scope of E&S risk oversight on site contractors, Virtuitis will appoint HSE supervisors at the State level to oversee the update and implementation of ESMS, report E&S performance to senior management, and train all site managers on E&S risk management to ensure E&S risks are adequately managed (ESAP #2).

Emergency Preparedness and Response

Virtuitis currently lacks a formalized standard-alone emergency preparedness and response plan (EPRP), however the ESMP, includes a section on "Environmental Emergency Preparedness and Response". This section outlines emergency scenarios such as fires, explosions, rainstorms, chemical and oil spills or leaks, and equipment failures. As part of ESAP #1, Virtuitis will develop and implement project site-specific EPRP that sets out principles and approaches to emergency response planning and management for construction

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and operational phases. The EPRP will include (i) potential emergency scenarios such as medical emergencies, electrical hazards, and security emergencies; (ii) an emergency response team with roles and responsibilities (as well as their back-up); (iii) operational requirements, including engagement with local emergency services in planning drills; (iv) address coordination with neighboring facilities and communities (especially with regards to collapse of distribution poles); (v) provision and display of signages, emergency response contact numbers and instructions at all mini-grid sites; (vi) planning for climate-related events - heavy rains, floods and heatwaves; (vii) regular monitoring, inspection and maintenance of emergency equipment; (viii) reporting, performance evaluation, and determination of training needs and schedules. All employees and contractors will receive training on emergency response.

Monitoring and Review

The Virtuitis ESMPs include regular monitoring of parameters such as noise, vibration, air quality, and hazardous materials during construction and operational phases. As per ESAP #1, Virtuitis will develop and implement an E&S / OHS monitoring and reporting procedure with defined KPIs including, OHS leading and lagging indicators (incident records, near miss, hazard reporting, drills and other workplace monitoring data), resource (water and energy) usage and efficiency, pollution prevention and control (air emissions, noise, effluents, solid/hazardous waste management) for both construction and operations phases to assess the effectiveness of the mitigation measures. The E&S monitoring will also include issues related to land acquisition and use (per ESAP#1 above), both from internal monitoring and external stakeholders (including external grievances raised) and a reporting structure that extends from the monitoring site up to the Board of Directors.

PS2- Labor and working conditions

As of April 2025, Virtuitis had 7 management employees, 40% of whom were females. During mini-grid site construction, workers are recruited from the local communities by contractors and their numbers are based on workforce needs at each phase of construction. Virtuitis assigns four personnel to each mini-grid location: a site manager, one technician, and two security personnel. When all mini-grids go operational, Virtuitis is projected to employ 460 people.

Human Resources (HR) Policies and Procedures

Virtuitis has an HR policy, code of conduct, labor management plan, and a gender and social inclusion (GESI) policy. These policies outline the principles and guidelines for effective human resource management, promoting gender equality, human rights, and fundamental freedoms within the Company, enabling ethical, safe, and inclusive labor practices throughout the project from planning and construction through to operations.

Working Conditions and Terms of Employment

Every employee receives a contract outlining the terms of employment, job description, remuneration, working hours, health insurance, statutory social security deductions and other benefits as required under Nigerian labor laws, including conditions for contract termination. Oral explanations of the contracts are given in a language they understand. Both the HR and GESI policies include provisions for employee development through on-the-job training and capacity building.

Workers organizations

Virtuitis employees are not currently part of a labor union. However, Virtuitis has documented its commitment to freedom of association and collective bargaining in its labor management plan.

Grievance Mechanism

Virtuitis has a grievance mechanism designed to ensure fair and prompt resolution of workplace and community-related issues. Complaints are recorded, investigated, and resolved within defined timelines, with escalation paths up to the corporate team or legal system if needed. The grievance procedure follows a multi-level approach and ensures confidentiality, and fairness but does not address SEAH/GBV. Going forward, Virtuitis will update this grievance redress mechanism to include a segregated process to managing SEAH/GBV complaints, allow confidential and anonymous reporting, include an anti-retaliation statement and extend coverage to workers employed by third parties (ESAP#3).

Occupational, Health and Safety (OHS)

Virtuitis has an Occupational Health and Safety (OHS) plan that governs the design, operation, and maintenance of its facilities. The plan outlines clear procedures for hazard identification, risk assessment, and

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incident management. It includes mandatory training programs, effective communication protocols, and practical measures for the prevention and control of physical, chemical, biological, and radiological risks. In addition, it emphasizes the consistent provision and proper use of appropriate Personal Protective Equipment (PPE) across all construction and operational levels. It addresses specific risks such as electrical hazards, working at heights, equipment handling, thus promoting a culture of safety on-site. Virtutis has an incident reporting form which provides a structured way to document accidents, near-misses, and unsafe conditions at project sites.

The project sites visited were equipped with safety signs, firefighting equipment, toilets, and first aid facilities. Going forward, Virtutis will update its HSE plan to include: i) procedures for safe installation and servicing of power distribution network in compliance with WBG General EHS Guidelines and EHS Guidelines for Electric Power Transmission and Distribution, and train all relevant workers on implementation of these procedures; ii) implementation of heat stress management protocols, provision of drinking water to workers, alternative work schedules during high temperatures, and the provision of shaded/cooled breaks; iii) ensure that the OHS plan and all implementation procedures and templates are retained at each site (virtually or physically) for use by site workers. These updates will be implemented at all project sites, supported by regular training and communication to all employees (ESAP #4).

Contractor Management

Virtutis does not have a stand-alone contractor management plan, rather it has a labor management plan with a section that addresses contractor management. Contractors and suppliers involved in construction, operation, and maintenance activities are required to comply with this plan. The plan outlines oversight of OHS standards and labor practices, including verifying workers' ages to prevent child labor and promote non-discrimination and equal opportunity. Contractors are required to follow codes of conduct and address incidents related to gender-based violence and occupational hazards.

Supply Chain

Virtutis procures solar panels, batteries, and associated equipment from 'Tier 1' suppliers and have low leverage on influencing the suppliers' E&S policies. To safeguard against unfair labor and OHS practices in the PV solar supply chain, Virtutis as per ESAP #1 will: i) develop and implement a supply chain code of conduct to include: i) prohibiting forced labor and containing other relevant EHS requirements, including a supplier registration/evaluation sheet that outlines these labor and HSE provisions; ii) contractual clauses requiring suppliers' compliance with the code of conduct; iii) a verification process to ensure new suppliers have the policies and procedures in place to meet requirements of the code of conduct; and iv) a formal process for supplier engagement, remedy or disengagement in case of unresolved non-compliances.

PS3-Resource Efficiency and Pollution Prevention

Solar mini-grid projects are not expected to materially consume key resources (e.g., energy, water) or result in significant emissions or pollution during operations. HSE risks are largely associated with the construction phase and are typically site-specific, short-term in nature, and managed through the implementation of the ESMPs.

Resource Efficiency

Water resource needs during construction and operations will be limited to domestic needs and for cleaning of panels and will be sourced from onsite water wells, as is the case for existing sites. Due to the small size of the solar plants, the volume of water required for cleaning is expected to be small and will not affect community water supplies. However, Virtutis will install flow meters to measure consumption from each well and report as KPI in its E&S performance monitoring requirement.

Air Emissions and Greenhouse Gases

The operations at the solar mini-grid sites are expected to produce minimal air emissions during the operational phase. However, site construction activities and transportation associated with the projects may generate dust and vehicle emissions, which will be managed within the site ESMP. Greenhouse gas emissions ("GHG") from the project during construction are predominantly associated with the transport of project components and on-site equipment and machinery. Immaterial GHG emissions are expected during site operations, mainly from occasionally used back-up generators. Annual GHG emissions are expected to be less than 25,000 tons of CO₂ equivalent (tCO₂eq/year).

Waste Management

Virtutis has a Waste Management Plan (WMP) and a recycling policy that outlines procedures for safe

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handling, storage, recycling, and disposal of waste generated from its mini-grid operations. Wastewater from the washing of solar panels drains into the soils on-site. Virtutis generates hazardous waste streams such as used batteries, damaged PV modules and electronics, used oil, and solvents which are stored in clearly labeled, leak-proof containers within a designated hazardous waste storage area. These wastes are subsequently collected by government-licensed third-party waste management facilities. Going forward, Virtutis will document waste transfer and disposal process to ensure compliance with the Waste Management Plan, national regulatory requirements and IFC PS3.

Hazardous Materials Management

Hazardous materials handled at the solar mini-grid sites include batteries (e.g., lead-acid or lithium-ion), electronic parts (e-waste), and diesel fuel. As per ESAP#1 and as part of ESMS improvement, Virtutis will develop a hazardous material management plan with specific procedures and work instructions for managing hazardous materials including storage, handling and use of the chemicals as well as response to any spills. Training on these procedures will be provided to all employees at all facilities during the workers' induction session and on a regular basis thereafter.

PS4-Community Health, Safety and Security

Road Safety & Traffic Management

The transportation of mini-grid components and equipment to the site and staff movements to and from site represents the key safety risk in relation to staff, other road users and communities adjacent to the roads being used. As per ESAP #1 Virtutis will develop a traffic management plan which: i) outlines procedures and protocols for site access, traffic routing and use of designated routes to reduce the risk of accidents, and management, emphasizing the safety of all road users; ii) require vehicles to be equipped with in-vehicle monitoring systems to track speed limits and driver behavior, thereby mitigating the risk of accidents; iii) include requirement for driver fatigue management and periodic review of accident statistics iv) emphasize regular vehicle maintenance and inspections to prevent mechanical failures, and the enforcement of speed limits through communities; v) emphasize community awareness campaigns to inform local residents about the project, potential risks, and safety precautions, with materials translated into local languages; and vi) include installation of safety signage and physical barriers around work zones to prevent unauthorized access. This plan will be adopted and implemented at all project sites.

Security Management

Each mini-grid site is fenced off with a single controlled access point, and access control and security are provided by unarmed, locally employed watchmen. This will be the case for all future sites. As per ESAP #1, Virtutis will undertake a security risk assessment of all its project sites and develop a security management plan to support the safe and secure development and operations of the project, in line with IFC PS4 requirements and provide trainings on UN Voluntary Principles on Security and Human Rights including on SEAH; life and fire safety emergency trainings; and engagement practices with surrounding communities.

Stakeholder Engagement

Virtutis has a community/stakeholder relations policy but does not have a standalone stakeholder engagement plan. Nonetheless, stakeholder consultations were undertaken as part of the regulatory EIA requirements during the planning phase, including early engagement during the project design phase and land lease process with the surrounding communities, village heads and federal and local government authorities. Given that stakeholder consultations and public engagements are ongoing processes, Virtutis will develop a stakeholder engagement plan that defines mechanisms for periodic engagements with all identified stakeholders; define roles and responsibilities for implementation, indicate means of communication; include a mechanism to record/document complaints, define a process for resolution of complaints and the associated timelines for resolution; develop a mechanism for ongoing reporting and feedback to external stakeholders as per ESAP #1.

Broad Community Support

Not Applicable

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BCS Comment :

Local Access of Project Documentation

Contact Person: Peter O. Momoh
Company Name: Virtuitis Solaris Ltd
Address: 244/246, Oshodi/Apapa Expressway, Lagos
Email: pmomoh@mojec.com
Phone: +234 9091203258
Website: <http://www.vsolaris.com/>

Environmental & Social Action Plan (ESAP)

Is there an ESAP to be disclosed for this project?

Yes

Mitigation Measures / Environmental & Social Action Plan (ESAP)

SNo	Description	Anticipated Completion Date
1	Strengthen the existing ESMS to ensure alignment with the DARES ESMF and IFC Performance Standards. This will include: (i) having the corporate ESG policy updated to indicate responsible parties for its execution; and (ii) updating its management programs to align with IFC PS and national legislation relevant to Virtuitis' operations.	2/28/2026
2	Virtuitis will update its grievance redress mechanism to include a segregated process to managing SEAH/GBV complaints, allow confidential and anonymous reporting, include an anti-retaliation statement and extend coverage to workers employed by third parties.	2/28/2026
3	Virtuitis will update its HSE plan to include: i) procedures for safe installation and servicing of power distribution network in compliance with WBG General EHS Guidelines and EHS Guidelines for Electric Power Transmission and Distribution, and train all relevant workers on implementation of these procedures; ii) implementation of heat stress management protocols, provision of drinking water to workers, alternative work schedules during high temperatures, and the provision of shaded/cooled breaks; iii) ensure that the OHS plan and all implementation procedures and templates are retained at each site (virtually or physically) for use by site workers. These updates will be implemented at all project sites, supported by regular training and communication to all employees	2/28/2026
4	Appoint HSE supervisors at the State level to oversee the update and implementation of ESMS, report E&S performance to senior management, and train all site managers on E&S risk management to ensure E&S risks are adequately managed.	2/28/2026

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Activity Log/Comments

Workflow Initiated by Taku Awa II (Draft Environmental and Social Review Summary) Oct 31, 2025 04:04 PM ET

Comments:

Cleared by Rosa I. Orellana (ESRO Clear) Oct 31, 2025 05:12 PM ET

Comments:

CRU Member Approved and Appraisal Disclosure Initiated by Ejura Phoebe Audu Nov 04, 2025 03:04 PM ET

Comments:

Client clearance received on 10/23/2025.

Supporting Documents

S.No.	Document Details
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