RURAL ELECTRIFICATION AGENCY

ENERGY = EMPOWERMENT = EFFICIENCY

PROJECT IMPLEMENTATION MANUAL

FOR THE

DISTRIBUTED ACCESS THROUGH RENEWABLE ENERGY SCALE-UP (DARES) PROJECT

June 2025

THE WORLD BANK

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Acronyms and Abbreviations

AC	alternating current
AIDS	Acquired Immunodeficiency Syndrome
CAPEX	capital expenditure
CBN	Central Bank of Nigeria
CoS	cost of service
DA	Designated Account
DARES	Distributed Access through Renewable Energy Scale-Up
DER	distributed energy resources
DisCo	distribution company
DSA	data sharing agreement
E&S	environmental and social
EIA	environmental impact assessment
ESS	Environmental and Social Standards
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
FGN	Federal Government of Nigeria
FPFMD	Federal Project Financial Management Department
FM	financial management
FMoF	Federal Ministry of Finance
FMoP	Federal Ministry of Power
FPFMD	Federal Project Financial Management Department
GA	Grants Administrator
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HR	human resources
HRL	High-Risk List
IDA	International Development Association
IFR	interim financial report
IVA	Independent Verification Agency
kW	kilowatt
kWh	kilowatt-hour
LGA	local government area
LRP	Livelihood Restoration Plan
M&E	monitoring and evaluation
MoU	memorandum of understanding
MSMEs	micro, small, and medium enterprises
MST	minimum subsidy tender
MW	megawatt

NEP	Nigeria Electrification Project
NERC	Nigerian Electricity Regulatory Commission
NFTU	NERC Fast-Track Unit
NSR	National Social Registry
OAGF	Office of the Auditor General of the Federation
OPEX	operational expenditure
OHS	occupational health and safety
PAYG	pay as you go
PBC	performance-based condition
PBG	performance-based grant
PMU	Project Management Unit
PPA	power purchase agreement
PPSD	Project Procurement Strategy for Development
PUE	productive use of energy
MW	megawatt
RAP	Resettlement Action Plan
RBF	results-based financing
REA	Rural Electrification Agency
RFP	request for proposals
SAS	stand-alone solar
SEA/SH	sexual exploitation and abuse/sexual harassment
SHS	solar home system
TA	technical assistance
V	volt
VIDA	Village Data

Overview

Objectives of the Manual

This Project Implementation Manual is prepared in accordance with the Financing Agreement signed between the Federal Government of Nigeria (FGN) and the World Bank on March 31, 2024, for the Distributed Access through Renewable Energy Scale-up (DARES) Project (hereafter, the Project). The manual contains the key management procedures for the implementation of the Project.

The specific objectives of the manual are to:

- Provide operational guidance to all those involved in the administration and management of the DARES Project, to ensure its effective and efficient delivery;
- Provide a framework for the implementation of the administrative, financial, and accounting operations under the Project;
- Describe and standardize the procedures, processes, and conditions for the disbursement of funds and define the responsibilities of each relevant entity at each stage of Project implementation; and
- Improve Project performance through continuous evaluation of its activities and results in accordance with the objectives of individual components.

This document may be periodically amended in consultation with the governance bodies of the DARES Project.

The Distributed Access through Renewable Energy Scale-up (DARES) Project

The successful implementation of the Nigeria Electrification Project (NEP) created an ecosystem for private sector–led electrification in Nigeria. The NEP, under which more than 1.08 million solar home systems (SHSs) were distributed and more than 173 mini grids were completed and operated, catalyzed the establishment and growth of an off-grid and mini grid industry in the country through grant/subsidy-based instruments.

To that end, the FGN, with the support of the World Bank, has embarked on another project with an aim to scale up the existing impact of the NEP and further aid in achieving the FGN's vision to achieve universal electrification by 2030 – the Distributed Access through Renewable Energy Scale-up (DARES) project. This Project seeks to accelerate electricity access in rural and underserved peri-urban areas through the deployment of mini grids (isolated and interconnected) and stand-alone solar (SAS) solutions.

Component 1: Solar Hybrid Mini Grids for Economic Development

Definition of Mini Grids and Eligible Technologies

Mini Grid Regulation 2023 (MGR 2023)[1] of the Nigerian Electricity Regulatory Commission defines a mini grid as an electricity supply system that has its own generation capacity and provides electricity to multiple customers and can be operated independently or connected to a distribution licensee's

[1] https://nerc.gov.ng/wp-content/uploads/2024/01/MINIGRIDREGULATIONS.pdf.

network. In these regulations, the term *mini grid* is used for electricity supply systems generating 0 kilowatt (kW) to 1 megawatt (MW) of generation capacity per site.

Two types of alternating current (AC) mini grids are recognized: isolated mini grids (not connected to a distribution licensee's network) and interconnected mini grids (connected to a distribution licensee's network).

Larger projects beyond 1 MW are similar in technical design to a typical mini grid but are regulated under a separate set of regulations: franchising guidelines and embedded generation regulations[2]

The technical focus of Component 1 of the DARES Project is on solar hybrid systems (solar photovoltaic generation with battery and generator backup with a reliable fuel source), though other renewable energy technologies may also be considered on a case-by-case basis. Prepaid metering will be required to mitigate revenue collection risk and improve the bankability of mini grid projects. Further, the mini grids will have to be built to Nigeria's grid code to make integration with the main grid possible when it reaches a mini grid's site.

In addition to isolated and interconnected AC mini grids, mesh grids, as defined below, will also be considered under Component 1 of the Project:

1. A mesh grid is a decentralized energy grid where all energy generation and storage assets are installed at or near (<250 meters [m] from) the customer premises.
2. All connections where generation and storage assets are installed ("prosumers") are fitted with transceiving devices ("mesh controllers") capable of both sending and receiving power in a regulated manner to other prosumers via an extra-low-voltage bus of 30–120 volts (V) direct current.
3. It is not mandatory to provide all customers with an AC 230 V/400 V connection on their premises. However, based on customer requirements, the mesh grid developer can install an AC connection if needed, which would require incorporating an inverter on the customer side. For an AC connection on the customer side, the developer must adhere to the 230 V (±6 percent), single-phase system as per the Nigerian grid code.
4. The distribution voltage through the interconnectors should not exceed 120 V direct current for distributing electricity or receiving excess electricity from prosumers. The permitted voltage drop is ±10 percent from the nominal voltage level at the end of the feeders.
5. Due to the extra low voltage in distribution, thin cable cross sections (for example, ranging from 2.5 to 10 square millimeters of single-core copper or aluminum cables) can be used as conductors between poles.
6. All connections are metered separately, monitored remotely, and controlled under a common management system.

[2]https://nerc.gov.ng/wpcontent/uploads/2014/03/NERC%20(Embedded%20Generation)%20Regulations,%202012.pdf

Objectives, Indicators, and Targets—Monitoring and Evaluation

The objective of Component 1 is to support the development of privately owned and operated solar hybrid mini grids in unserved (primarily rural and remote) and underserved (primarily urban and peri-urban) areas with high economic growth potential.

Component 1 will target different sets of private developers, depending on the mini grid structure, and is aimed at serving households; micro, small, and medium enterprises (MSMEs); and public institutions.

Progress toward achieving Component 1 will be measured by the indicators presented in table O.1. The targets under Component 1 are to provide electricity access to 4.05 million people through mini grids. The Project Management Unit (PMU) for DARES will be responsible for collecting data from all mini grid developers participating in Component 1 and for reporting these indicators on a quarterly basis.

Table O.1• Key Performance Indicators for Component 1

Data Type	KPI	Unit	Collection Frequency	Data Source
Design Phase	Maximum amount of power that can be drawn at one time	kWp (kilowatt peak)	At start of project	Manual entry or declarations
Design Phase	Total Installed Battery Storage in Mini grid Sector	kWh	At start of project	Manual entry or declarations
Design Phase and at Commissioning	Total Installed Capacity via Solar	kWh	At start of project	Manual entry or declarations
Design Phase and at Commissioning	Total Installed Capacity via Conventional generation	kWh	At start of project	Manual entry or declarations
Design Phase	Lifetime of Mini grid Sites	Years	At start of project	Manual entry or declarations
Design Phase	Levelized cost of electricity (LCOE)	USD / kWh	At start of project	Manual entry or declarations
Design Phase and At Commissioning	Number of connections at a mini grid site at the time of site commissioning	#	At start of project	Manual entry or declarations, and Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Demand Indicator	Total number of connections per site each year after commissioning	#	Annually	Manual entry or declarations
Demand Indicator	Customer acquisition rate	%	Regular Collection	Smart meter data: Meter Readings, Electricity Payment &

				Customer Activity Records
Demand Indicator	Number of Customers in Each Consumption Bracket (<5 kWh, 5-10 kWh, etc..)	#	Quarterly	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Demand Indicator	Average Consumption Per User (ACPU)	kWh	Monthly	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Demand Indicator	Year on Year Consumption Growth	%	Annually	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Demand Indicator	CUF Capacity Utilization Factor. Ratio of energy sold to total possible production	ratio	Monthly	Manual entry or declarations, and Generation data: Utility Readings & Battery Readings
Design Phase and After Commissioning	Renewable energy fraction	Fraction	Regular Collection	Generation data: Utility Readings & Battery Readings
Quality	Percentage of time of available power supply at a site per month, as measured by inverter output	%	Monthly	Generation data: Utility Readings & Battery Readings
Quality	System Average Interruption Frequency Index (SAIFI): The number of non-momentary electric interruptions, per year, when power supply is unavailable for more than X minutes, that the average customer experienced	#	Annually	Generation data: Utility Readings & Battery Readings
Quality	System Average Interruption Duration Index (SAIDI): The minutes of non-momentary electric interruptions, per year,	minutes	Annually	Generation data: Utility Readings & Battery Readings

	the average customer experienced.			
Revenue	Average Revenue Per User (ARPU)	USD	Monthly	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Revenue	Year on Year Increase in ARPU	%	Annually	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Revenue	Effective Tariff	USD	Annually	Smart meter data: Meter Readings, Electricity Payment & Customer Activity Records
Finance	Operating Expenditure (OPEX): Amount of money spent to operate a site per month	USD / customer	Monthly	Manual entry or declarations
Finance	Earnings before interest, taxes, depreciation (EBITDA)	USD	Annually	Manual entry or declarations
Socio-economic	Consumption split by gender of main customer in household	Description	Regular Collection	Manual entry or declarations
Socio-economic	Consumption split by Customer Type defined during design. Include MSME category. For example: Anchor, Productive, Residential, Public, Commercial.	Description	Regular Collection	Manual entry or declarations

Structure and Budget

The total International Development Association (IDA) commitment for Component 1 is $410 million and is supplemented by technical assistance activities included under Component 3.

Component 1 consists of two investment subcomponents. The subcomponents are defined by their different subsidy approaches, and they will be implemented in parallel. The subcomponents are as follows:

- **Subcomponent 1.1—minimum subsidy tender (MST).** The MST subcomponent, with an IDA commitment of $215 million, will aggregate demand and prepare portfolios of mini grid

projects for tenders. The mini grids will be privately financed, owned, and operated, and the tender will select the developer that needs the lowest subsidy to do so. Three separate MST pipelines will be used:

  - Isolated mini grids—based on new customer connections ($/end user)
  - Interconnected mini grids—based on a percentage or an absolute value of the overall capital expenditure (CAPEX) cost expressed in $/MW or kW
  - Solar rooftops—based on a percentage or an absolute value of the overall CAPEX cost under an energy-as-a-service model (EAAS)

- **Subcomponent 1.2—performance-based grants program.** This subcomponent, with an IDA commitment of $195 million, will provide mini grid operators with administratively established performance-based grants (PBGs) based on new customer connections ($/end user) for isolated mini grids and a percentage or an absolute value of the CAPEX expressed in $/MW or kW for interconnected (grid-connected) mini grid projects. PBGs will be made available to mini grid developers on a rolling basis and differentiated based on geographic and socioeconomic factors (determined by existing mini grid activity) and consumer classes (residential, productive uses of energy). Eligible projects must have minimum commercial or productive loads to ensure sustainability overall.

Environmental and Social Safeguards

The DARES Project will have environmental and social (E&S) risks and impacts associated with its activities, primarily the construction of mini grids. While all activities are expected to have moderate E&S impacts due to the limited scale of the civil works required to develop solar hybrid mini grids of less than 1 MW capacity, there are inherent environmental, social, health, and safety risks.

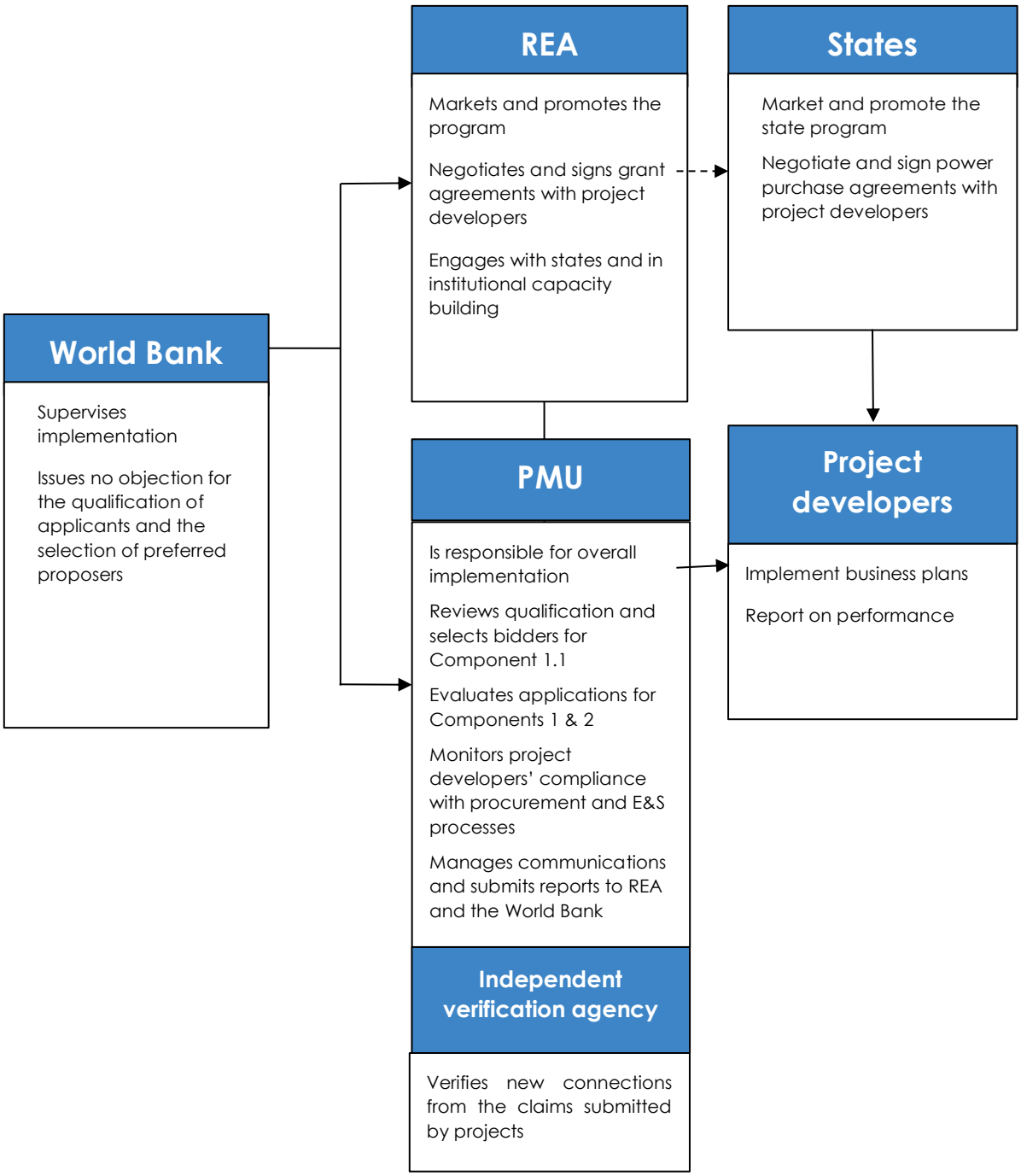
To address the identified risks, the previous Environmental and Social Management Framework under the NEP has been updated and disclosed “Environmental & Social Procedures For Mini Grid Developers”). See figure O.1 below for stakeholder mapping.

Stakeholder Mapping

The success of the mini-grid component of the DARES Project hinges on the active engagement and collaboration of a diverse set of stakeholders.

This section outlines the stakeholder mapping for the mini-grid component aiming to identify key players, as well as their interests, influence, roles, in order to foster meaningful engagement that aligns with the Project’s goals.

Figure O.1 • Component 1: Stakeholder Mapping



Note: E&S = environmental and social; PMU = Project Management Unit; REA = Rural Electrification Agency.

Component 2: Stand-Alone Solar

Component 2 of the DARES Project is a $300 million initiative for making SAS systems more available and affordable for households, MSMEs, public institutions, and farmers in rural areas. The component focuses on improving energy access among rural and lower-income segments through strategic PBGs categorized into three distinct areas:

1. **Performance-based grants for solar home systems ($100 million).** These grants are structured to reward successful deployments of solar technologies, ensuring effective and efficient implementation of the systems. The grants are designed to promote the deployment of SHSs across various scales for households and MSMEs in hard-to-reach or low-income segments. The program features:
    a. **Supply-side subsidies.** These are designed to help solar companies scale operations into hard-to-reach and underserved areas by providing financial incentives based on the location of installed systems and specific performance criteria. The purpose of these subsidies is to bridge the gap between higher operational costs in remote areas and the need for affordable access to solar energy, ensuring that small-scale users (Tiers 1–2) are adequately supported.
    b. **Demand-side subsidies.** The purpose of these subsidies is to make SHSs more affordable for the individuals listed in the national social register; individuals below the poverty line, who typically cannot afford these systems without financial assistance, are targeted. This component will be launched at a later date.
2. **Performance-based grants for solar business systems ($150 million).** This category focuses on the deployment of higher-capacity solar systems tailored to meet the energy needs of specific productive entities such as public facilities, economic clusters, and agro-processing zones. These solutions will be provided to individual users and help them access reliable, steady power for daily operations. To address affordability and improve access, the program will introduce energy-as-a-service and lease-to-own models, which minimize up-front costs and distribute payments over time. These models are pivotal in enabling these beneficiaries to adopt sustainable energy solutions without making substantial initial investments. This component will be launched based on additional data and studies currently being conducted by the Rural Electrification Agency (REA).
3. **Performance-based grants for the productive use of energy technologies ($50 million).** The objective of this subcomponent is to boost the affordability and accessibility of technologies that significantly increase productivity and income generation. The subcomponent is specifically tailored to deploy solar-powered technologies that spur economic activities. A significant focus is placed on mature technologies such as solar water pumps and solar-powered cooling systems. Technologies are selected based on robust quality assurance frameworks and established market activities, ensuring they are ready for effective deployment. To facilitate this, a dedicated financing window employing a reverse auction mechanism will be utilized, promoting competitive pricing and efficient resource allocation.

Additionally, the subcomponent includes a separate funding window for emerging technologies—those with high potential impact but lacking substantial market presence or comprehensive quality

assurance frameworks (e.g., solar-powered electric mobility solutions and charging stations). This adaptive support strategy aims to nurture these technologies through targeted testing and evaluation, facilitating their evolution to meet rigorous quality and market standards. The approach ensures a balanced investment strategy, which aids in improving current solutions while fostering innovation and addressing future energy needs.

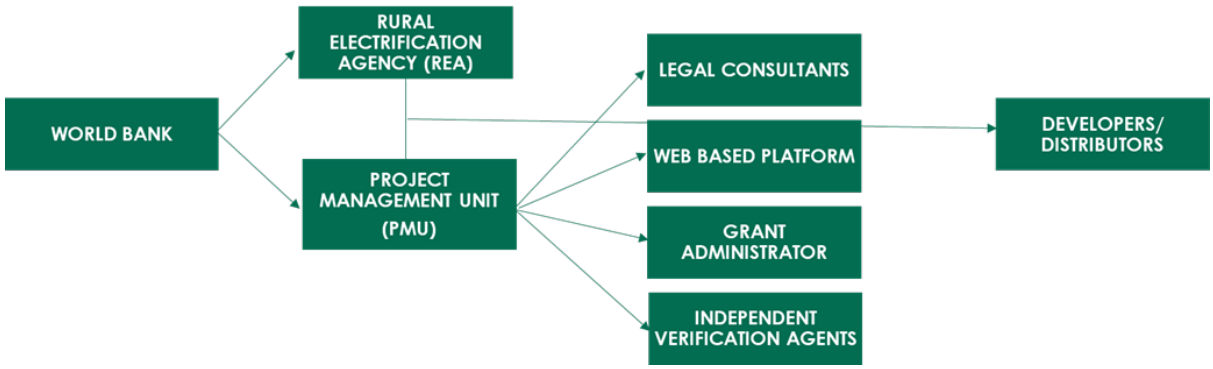
Environmental and Social Guidelines

See Environmental & Social Procedures For SAS/SHS Distributors under E&S section (Supporting Units) and figure O.2 for the stakeholder map

Stakeholder Mapping

This section provides an overview of the relationships and interactions between key stakeholders.

Figure O.2 • Component 2: Stakeholder Mapping



Component 3: Technical Assistance

Objectives

The objective of Component 3 is to support the implementation of the Project and broad capacity building with all major stakeholders and the PMU. Component 3 will finance the implementation of the Project and the general operations of the PMU, and also help build a rural electrification framework.

Structure and Budget

See Annex A.

Project-Level Institutional Arrangements

The implementation of the Project relies on the active participation of several important stakeholders and leverages the competency of each of these parties. At the Project level, the main stakeholders are REA, the DARES-PMU, the project developers and distributors, the Federal Ministry of Finance (FMoF), the Federal Ministry of Power, Nigerian Electricity Regulatory Commission, Nigerian Electricity Management Services Agency, the Federal Ministry of Environment, the World Bank, International Finance Corporation

Rural Electrification Agency

The REA's specific responsibilities are:

- Ensure overall promotion of DARES;
- Open a designated US dollar account with the Central Bank of Nigeria for the Project;
- Identify any problems with the application process and propose possible improvements;
- Identify any problems with the verification process and/or applications and propose possible improvements;
- Monitor the progress of the program in achieving the outcome indicators, and coordinate and consolidate reporting information for all implementing institutions of the NEP for overall project reporting to the World Bank; and
- Make operational decisions regarding the utilization of loan funds.
- Review the Annual Audited Financial Reports of the Project before it is sent to the World Bank after each fiscal year.
- REA being the project implementing Agency, is responsible for complete oversight of the PMU in the implementation of the DARES project. The PMU structure itself is headed by the Head, Project Management Unit who reports directly to the Managing Director (MD).

Project Management Unit

The PMU's responsibilities include the following:

- Confirm that projects meet all eligibility criteria established in this manual, including compliance with the World Bank's fiduciary and safeguards requirements;
- Manage designated accounts with the Central Bank of Nigeria for the Project;
- Request replenishment of the designated accounts according to World Bank guidelines;
- Prepare quarterly reports, to be furnished to the World Bank one month after the end of the period covered by such reports;
- Prepare a completion report, to be furnished to the World Bank three months after the closing date of a project;
- Conduct financial reporting to the FMoF and the World Bank;
- Request no objection from the World Bank where required by this manual;
- Ensure annual audited financial reports for the Project are prepared and furnished to the World Bank within six months after each fiscal year;
- Manage a centralized database, including a management information system for data collection, monitoring, reporting, and verification;
- Ensure that the activities and projects approved for funding support comply with the guidelines for DARES; and
- Provide recommendations on operational decisions regarding the utilization of loan funds.

Federal Ministry of Finance

The responsibilities of the FMoF include to:

- Sign legal agreements between the federal government and the World Bank;
- Ensure effectiveness of the loan agreement for DARES;
- Participate in project missions; and
- Manage the financing agreement.

Federal Ministry of Power

The responsibilities of the Federal Ministry of Power include:

- Enable the REA (through the DARES-PMU) to carry out all necessary work required for the successful implementation of DARES;
- Provide policy directives to support DARES in meeting its objectives; and
- Issue and promote policies related to renewable energy and rural electrification.

Federal Ministry of Environment

The responsibilities of the Federal Ministry of Environment include:

- Provide approvals for project categorizations;
- Review and approve all safeguard instruments for DARES; and
- Disclose safeguard instruments.

World Bank

The responsibilities of the World Bank include:

- Sign legal agreements with the FMoF;
- Supervise the Project;
- Review no objection requests and provide timely no objection letters where required and appropriate;
- Replenish the designated account for DARES as per the disbursement projections for the Project and in accordance with the Bank's disbursement guidelines; and
- Process requests for the revision of the legal agreements if requested.

Governance Structure

The Distributed Access through Renewable Energy Scale-up (DARES) Project, under the Rural Electrification Agency, is the successor to the Nigeria Electrification Project (NEP). Drawing from the valuable lessons learned during the implementation of NEP, DARES aims to build upon these successes by strengthening key areas of project execution. This section outlines critical components designed to enhance governance, oversight, and management of the project ensuring a more efficient and effective implementation of DARES, ultimately leading to better outcomes in expanding energy access across Nigeria.

Overall Governance

The activities of the PMU are solely governed by the Project Appraisal Document (PAD), Project Agreements and the Project Implementation Manual.

All operational and staffing changes to the PMU structure and technical designs of project components must be done with the concurrence of the MD/CEO.

All evaluations, Grant Agreement related activities, verifications and disbursements will follow existing REA and PMU protocols implemented under the NEP that have clearly defined roles for PMU, Legal department and MD without duplication of roles.

Human Resource Management

REA Integration

In line with the Agency's strategic plan to increase internal capacity, the Project Management Unit (PMU) for DARES will be structured to facilitate capacity building for REA staff. This phased 10%-15% integration is a key element of our sustainability plan, designed to use the DARES project as a platform to enhance the capacity of REA staff. By doing so, we aim to ensure that the skills and expertise gained through the implementation of DARES are retained within the Agency, enabling continued success in future initiatives long after the project closes.

Performance Management System

The performance management system for PMU consultants and external consultants will be a key focus to ensure accountability and alignment with project objectives. To this end, comprehensive performance reviews will be conducted on a quarterly basis, evaluating progress against the milestones and deliverables outlined in their original contracts. These reviews will serve as a critical tool in assessing whether contract renewals are justified, ensuring that only high-performing consultants are retained for the continued success of the DARES project.
Looking ahead, once a robust ERP system is in place, we aim to further enhance this performance management process by requiring consultants to submit monthly reports and timesheets. This will provide a more granular view of their contributions and enable real-time tracking of progress against targets. The introduction of such performance tracking mechanisms will foster greater transparency, improve efficiency, and help ensure that consultants remain consistently aligned with the project's goals and timelines. This structured approach is essential for maintaining the highest standards of performance and ensuring that the project is managed effectively throughout its duration.

Compensation and Benefits

The compensation of consultants will be graded based on the prevailing development partner published rates. Compensation increments/adjustments will be based on the prevailing Consumer Price Index or other agreed price index variables agreed upon for the period understudy. Also, all travel benefits will be in line with the prevailing development partner published rates.

Conflict Resolution/Grievance Mechanism

All conflicts should be handled internally by the Project Management Units. If no resolution is reached, then the situation can be brought to the MD's notice for the final verdict.

Trainings and Exercises

All PMU staff are entitled to training every year, and REA staff participation is mandatory. This is to ensure knowledge sharing and alignment. This will apply to all exercises undertaken by the PMU especially Monitoring and Evaluation exercises.

Procurement

The required Management approvals (including MD) should be obtained for all updates and reviews to the Workplan and TORs. All necessary Management approvals should be obtained for procurement activities as stipulated in the PIM.

Communications

Correspondence with Ministries, Departments and Agencies (MDAs)

All initial correspondences with MDAs should be routed through the MD's office until a formal engagement framework and modality has been approved.

Correspondence with Financiers, Investors and Development Partners

The MDs office should be kept in the loop on all relevant day to day correspondences with Financiers, Investors and Development Partners.

Engagement with the Sub-Nationals

The engagement between the PMU and any sub-national entity for the implementation of the DARES project must be integrated into the broader sub-national engagement strategy of the Agency. This ensures that all electrification projects across the REA, including the DARES, align with the overarching framework for state and local collaboration, rather than being treated in isolation. This coordination is necessary for a unified approach to electrification as proposed by the NESIP, leveraging existing relationships, resources, and strategies that the Agency has already established at the state level by virtue of implementing its mandate.

CHAPTER I • Component 1: Solar Hybrid Mini Grids for Economic Development—Implementation

I.A • NEP Legacy Projects and Commitments

As the Nigeria Electrification Project (NEP) phases out, the depletion of grant funding under Component 1 presents a significant challenge to the stability of the mini grid market, which the program has nurtured. This situation could potentially impede the achievement of the goals of the Distributed Access to Renewable Energy Scale-Up (DARES) Project, as private capital lenders and investors may lose confidence in the program. In response, the DARES PROJECT aims to fulfill all outstanding commitments identified under the NEP and maintain the achievements that the market has attained through the NEP.

Table 1.1 outlines the status of NEP commitments.

Table 1.1 • Commitments Made under the Nigeria Electrification Project

S/N	Comitment category	Total number of projects	Total paid connections	Total claims in process ($450/connection)	Balance of connections	Total grant disbursed ($)	Grant balance amount ($450/connection)
1	Completed Commitment	39	16,037	$ -	1	$ 9,084,800	$ 450
2	Commissioned_Paid (M2-M3) phase	111	79,824	$ 2,032,200	36,559	$ 42,009,450	$ 16,451,550
3	Commissioned_Paid (M1-M2) phase	5	926	$ -	4,391	$ 555,600	$ 1,975,950
4	Commissioned_Unpaid	20	-	$ 1,886,760	7,792	$ -	$ 3,506,400
5	Underconstruction_Paid M1 phase	8	5,742	$ -	8,631	$ 3,445,200	$ 3,883,950
6	Underconstruction_Unpaid	18	-	$ -	12,272	$ -	$ 5,522,400
7	GA Stage	195	-	$ -	192,756	$ -	$ 86,740,200
Total		**396**	**102,529**	**$ 3,918,960**	**262,402**	**$ 55,095,050**	**$ 118,080,900**

S/N	NEP LEGACY PROJECTS	Total number of projects	Total paid connections	Total claims in process ($450/connection)	Balance of connections	Total grant disbursed ($)	Grant balance amount ($450/connection)
2	Commissioned_Paid (M2-M3) phase	111	79,824	$ 2,032,200	36,559	$ 42,009,450	$ 16,451,550
3	Commissioned_Paid (M1-M2) phase	5	926	$ -	4,391	$ 555,600	$ 1,975,950
4	Commissioned_Unpaid	20	-	$ 1,886,760	7,792	$ -	$ 3,506,400
5	Underconstruction_Paid M1 phase	8	5,742	$ -	8,631	$ 3,445,200	$ 3,883,950
Total		**144**	**86,492.00**	**$ 3,918,960**	**57,373.00**	**$ 46,010,250**	**$ 25,817,850**

Note: GA = grant agreement; NEP = Nigeria Electrification Project.

The NEP has completed disbursements for 39 projects in "Completed Commitment Category 1." Projects in Categories 2–5 qualify for legacy project status; of these, 144 have either been commissioned or are under construction. The NEP has disbursed $55,095,050 in claims, leaving a remaining grant balance of $25,817,850. This balance does not account for projects in Categories 6 and 7, which are either unpaid and under construction, or in the grant agreement stage. All grant agreements in Categories 6 and 7 will be canceled, and these projects will need to reapply for DARES grant agreements as DARES projects.

NEP legacy projects' compliance with DARES. For NEP legacy projects to be eligible for DARES funding, they must adhere to the following terms and operate under the following conditions:

- The NEP legacy projects will retain their approved technical design and specifications.
- All projects would need to comply with the DARES Environmental and Social Framework.
- All NEP legacy projects would have to conclude all claims within six months of the launch of the DARES Project.

Exceptions for NEP projects under DARES. As revealed by project progress monitoring performed as part of the NEP, several projects are currently under construction and have commenced deployment based on the approved design and terms. However, the DARES launch design and timing may not be favorable for certain projects, potentially leading to stranded investments. Therefore, it is necessary to consider exceptions for projects in the following situations:

- Projects with NEP grant agreements that are known to the Rural Electrification Agency (REA) to be under construction and have deployed lead-acid batteries.
- The NEP performance-based grant (PBG) interconnected mini grids could still go ahead to claim grants on a per connection basis under the PBG isolated mini grid type in alignment with the NEP agreement on the grant amount.
- All NEP projects applying for DARES agreements may use their existing commercial agreements or NERC permits in place of their expired exclusivity agreements. This aims to keep project implementation costs low.

Table 1.2 • Environmental and Social Compliance of NEP Legacy Projects

Applicable to:	Process:
Mini grid projects approved by NEP, with signed grant agreements, that are either a) commissioned and operational (but still have grants to claim) or b) under construction and have received partial payment under NEP.	All subprojects must be screened for pertinent environmental and social (E&S) risks. Based on the screening results, assessment is to be conducted to identify all risks and implement mitigation measures/instruments. It is to be ensured that the E&S risk assessment and mitigation measures/instruments are consistent with the relevant standards that have been triggered under Distributed Access through Renewable Energy Scale-Up (DARES) projects.

I.B • Subcomponent 1.1: Minimum Subsidy Tender (MST) for Mini Grids

MST Structure and Process

This will be the overarching results-based financing principle guiding the Project's Component 1: Solar Hybrid Mini Grids for Economic Development.

Proposal stage. This is the first stage, where prequalified private sector players will apply for the grant incentive through REA by submitting proposals in response to a request for proposals (RfP) in the MST. At this stage, the necessary information is provided to the private sector to facilitate the project development phase for mini grid developers.

Disbursement stage. The next stage is the disbursement stage, where clear milestones and processes are established for developers to follow. This stage ensures that developers have a structured road map for achieving project goals.

Program Description

This section describes the implementation plan for the MST, explains the tender structure, and provides an overview of the tender requirements.

DARES will implement a competitive tender to develop mini grids on a build-own-operate model. This component aims to:

1. Enable grant-level discovery;
2. Aggregate demand that provides the level of scale and replicability required to attract larger investors; and
3. Direct project development to the Federal Government of Nigeria's geographical areas of interest that the private sector may otherwise be reluctant to consider.

Three separate pipelines will be used to implement the tender: isolated mini grids, interconnected mini grids, and state government–led rooftop solar solutions to be piloted in Lagos state.

The tender process will be executed through a web-based platform, and it will entail the dissemination of information to proposers, submission of project proposals, and the evaluation of proposals via the platform.

Overview of Requirements

For each tender, prequalified proposers will submit a proposal, which will be evaluated based on quality (technical proposal) and the price (minimum subsidy required) needed to build, own, and operate a portfolio of mini grids to serve the site(s).

Each mini grid will be designed to serve a predefined demand and number of connections with a predefined service quality. Proposers will be required to propose a system design that best fits the demand profile.

Proposers may confirm a system design suggested by DARES for each site or justify another system design. DARES has defined mini grid system designs consisting of solar hybrid mini grids with battery storage, mesh grids, or interconnected solutions. DARES will match each site to one or more suitable system design(s) according to the site's load profile. Proposers will be allowed to offer system designs different from the ones identified by DARES. However, any departure from the system design suggested by DARES will require the proposer to provide a detailed explanation in its proposal. DARES reserves the right to reject proposals that do not conform to the minimum technical and service standards it has prescribed for the distributed energy resources (DER) system. Proposers will have to comply with the minimum technical requirements and service standards for the system design selected for each site.

All mini grids developed through the tender will be required to obtain the following regulatory authorizations:

- A permit or letter of registration from the Nigerian Electricity Regulatory Commission (NERC) regarding interstate electricity distribution and without prejudice to the autonomy granted to states under the Electricity Act, 2023. The NERC Mini Grid Regulations mandates permits for mini grids above 100 kW, while mini grids below 100 kW may choose to either register as operators or apply for a permit. The two types of authorizations have one significant difference: for a permit holder, one option available will be "eligibility" for compensation from the distribution company (DisCo) where the grid is extended to the DisCo's area of operations. While registered operators have some flexibility with respect to tariff setting and are encouraged to apply the recommended technical guides contained in the regulations, permit holders are required to design, construct, and operate their systems in compliance with the

technical codes and standards as prescribed by NERC. For a larger system above 1 MW, an embedded generation license may be obtained from NERC and a franchise agreement secured with the DisCo if and where applicable.

- An Environmental and Social Impact Assessment (ESIA) or an Environmental and Social Management Plan (ESMP) from the Federal Ministry of Environment. Category 1 sites (high-risk sites) must obtain an ESIA certificate. Category 2 sites (low-risk sites) can obtain an ESMP.
- An inspection certificate from the Nigerian Electricity Management Services Agency proving all electrical installations comply with the Nigerian grid code and the Nigerian Electricity Supply and Installation Standards. Inspections are to be carried out before projects are commissioned.

Proposers will be required to submit, as part of their proposals, business plans that explain how they intend to stimulate demand during the daytime. The development of productive use is considered critical to stimulating the daytime demand for electricity and improving the sustainability of the mini grids.

Minimum Subsidy Tender for Isolated Mini Grids

Overview of Subcomponent

As part of the competitive tendering program, isolated mini grid sites will be prioritized to be tendered. They will be prioritized based on population, productive loads, and estimated load profiles.

Tender Structure

This is yet to be determined and will be included once finalized.

Minimum Subsidy Tender for Interconnected Mini Grids

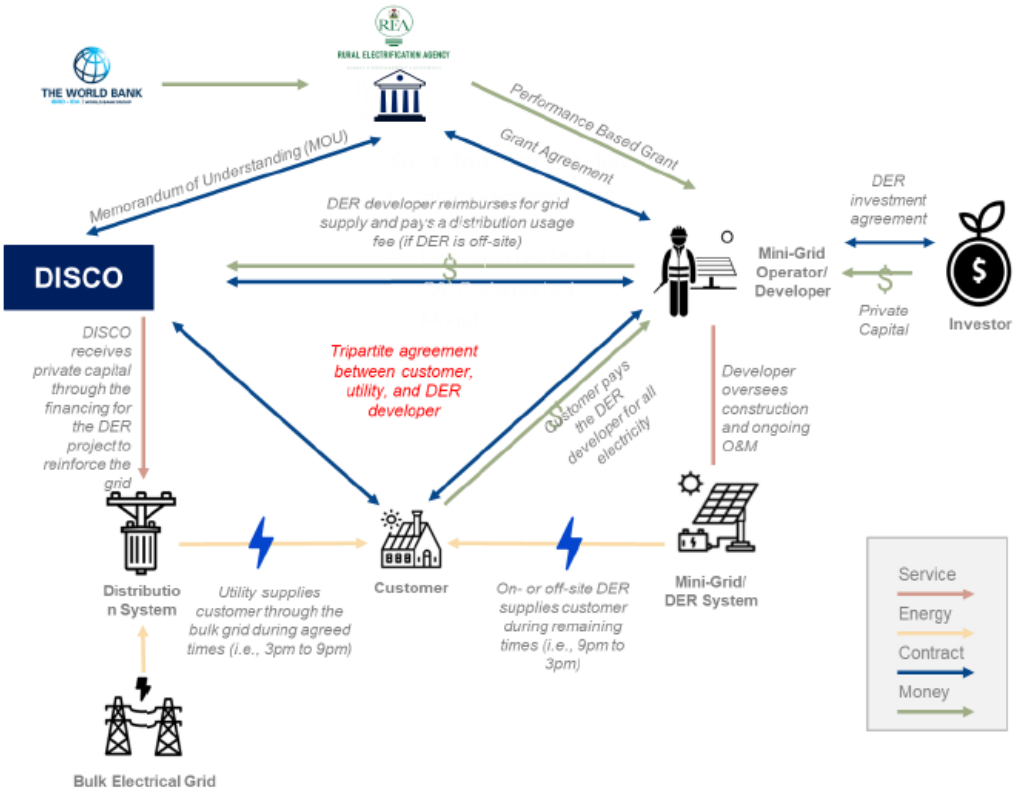
Overview of Subcomponent

DARES secured a buy-in from the participating DisCos and executed a memorandum of understanding (MoU) with REA on developing 125 selected sites or more within its franchise area. The participating DisCos will receive technical assistance (TA) through REA's Project Management Unit (PMU). The TA includes support for capacity building, site assessment, energy audit, and demand studies. A DisCo can also leverage the work it is currently undertaking with various development partners, such as the Global Energy Alliance for People and Planet (GEAPP), German Agency for International Cooperation (GIZ), and others. In addition, DARES will leverage the pipeline development work of various other organizations, for example, GIZ, KfW, GEAPP, and RMI, which have identified, with 10 DisCos, several sites suitable for deploying interconnected mini grids. The Project will collaborate with these development partners to ensure their pipelines are used for the MST process. DARES will also earmark resources for a project preparation facility that can support the site identification work, which involves prefeasibility studies, energy audits, and initial community engagement.

The Interconnected Mini Grids Business Structure

The proposed interconnected mini-grid business model comprises of models suited for project size of up to 1MW (See figure 1.1 below) and project size above 1MW (see figure 1.2 below)

Figure 1.1 • DARES MST Interconnected Mini Grids Model for Systems under 1 MW

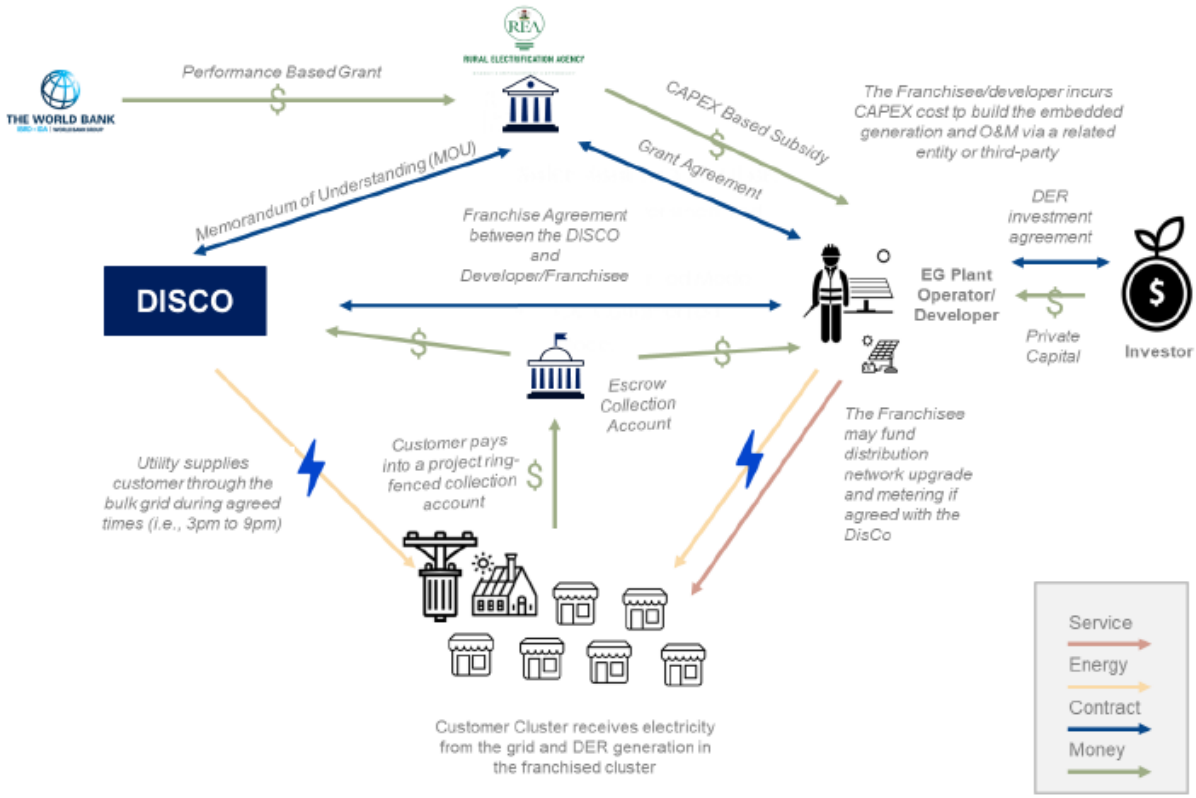


Note: DER = distributed energy resources; DARES = Distributed Access through Renewables Energy Scale-Up; DisCo = distribution company; MoU = memorandum of understanding; MST = Minimum Subsidy Tender; O&M = operation and maintenance.

The MST interconnected mini grids business structure for systems below 1 MW is as follows:

- A nondisclosure agreement/MoU is established between REA and the participating DisCos to finalize the MST and site preparation agreements.
- The primary focus is on addressing network gaps by identifying areas that are not prioritized in DisCos' investment planning.
- The selected developers enter into a tripartite agreement with the DisCos and the community.
- The tripartite agreement has an initial term of 10–20 years.
- REA enters into a grant agreement with the developers selected from the tender process.
- The developers undertake the construction, and the operations and maintenance phase.
- The developers generate revenue and reimburse the DisCos for grid supply.

Figure 1.2 • DARES MST Interconnected Mini Grids Model for Systems above 1 MW



Note: CAPEX = capital expenditure; DER = distributed energy resources; EG = Embedded generation DisCo = distribution company; MoU = memorandum of understanding

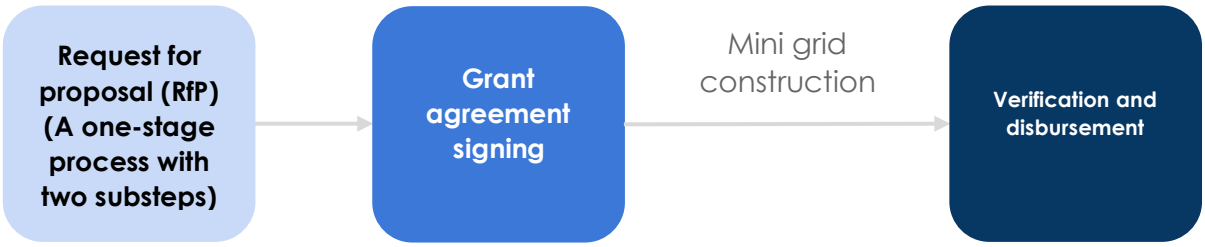
The MST interconnected mini grids business structure for systems above 1 MW is as follows:

- A nondisclosure agreement/MoU between REA and the participating DisCos to agree on the MST and site preparation.
- Upgrades to the DisCo's distribution system via hardware financed by the private capital of the DER developer.
- Selected developers enter into a franchise agreement and/or have a power purchase agreement (PPA) with the DisCos depending on the business model.
- REA enters into a grant agreement with the developers.
- The franchise agreement and/or PPA would have an initial term of 10–20 years.
- The DisCo and developer earn revenue from the collections account after deductions of the necessary reimbursements.

Tender Implementation Process

The tender for MST interconnected mini grids will be implemented as a one-stage process with two sub-steps, as illustrated in figure 1.3.

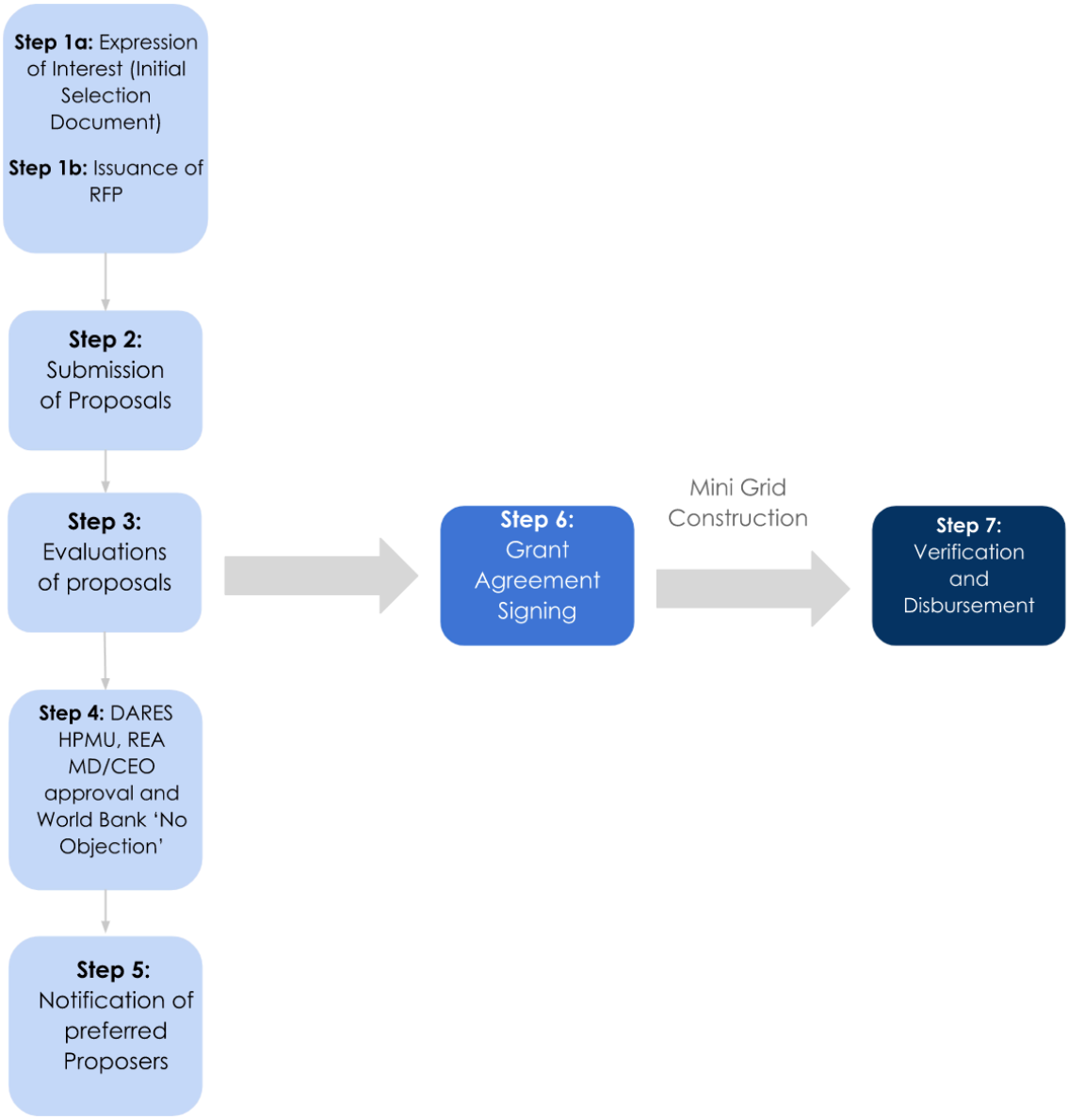
Figure 1.3 • Phases for Tender Implementation



- **Requests for proposals.** This will be a one-stage process with two substeps:
  - **Prequalification.** Applicants will be screened based on multiple criteria, including company governance structure, integrity and reputation, experience and skills, technical capacity, financial resources, and implementation capacity.
  - **Issuance of an RfP.** Qualified applicants will be requested to submit proposals in response to the issued RfP document. Once the DARES interconnected mini grids Procurement Committee has evaluated the proposals, the PMU will notify both successful and unsuccessful bidders on the outcome of the evaluation process. Thereafter, successful bidders will be notified of the award of the tender. The tendering process will be completed with the PMU signing a grant agreement with the most advantageous bidder.
- **Grant agreement.** The draft grant agreement will be developed and sent to the successful bidder to review and accept. REA will then sign the grant agreement with the successful bidder.
- **Mini grid construction, verification, and disbursement.** After the grant agreement is signed, the successful bidder will construct mini grids and connect their customers. The grant will be disbursed upon verification that the DER asset constructed has been connected to the grid and end users have been provided a satisfactory service.

Figure 1.4 outlines key steps in the application and approval processes.

Figure 1.4 • Detailed Application and Approval Processes for the MST



Note: CEO = chief executive officer; DARES = Distributed Access through Renewable Energy Scale-Up; HPMU = head of the project management unit; MD = managing director; REA = Rural Electrification Agency; RfP = request for proposals.

Step 1: Issuance of a request for proposals

Applicants will be invited via the issuance of an initial selection document for prequalification. Successful applicants would be issued the RfP. Bidders will not be allowed to select specific sites within a lot, but will have to submit bids for entire lots. Bidders wishing to offer any price reduction in terms of the subsidy requirement for the award of multiple lots, will be required to indicate this in their bids.

The minimum technical requirements for each lot will be articulated in the RfP. The requirements will include distribution networks designed in accordance with the requirements of the grid code, certified equipment, prepaid metering systems, and a certain number of productive and consumer appliances to be made available to mini grid customers where applicable.

At this stage, a bid bond may be required to ensure that the preferred proposer remains committed to signing the grant agreement.

Bidders will be encouraged to partner with local companies. Careful consideration will be given to efficient solutions that reduce costs to customers, notably using local resources, in compliance with the World Bank's procurement processes.

Step 2: Hold a bidders' conference

A bidders' conference will be held after the RfP has been issued. This conference will allow the bidding process to be transparent and allow addressing any concerns of the bidders. The bidders' conference will, among others, address bidders' concerns; requests for clarifications from bidders on the market potential for each lot in the RfP; explain the legal and regulatory framework applicable to this specific RfP; and explain the requirements of the bidding process, including the selection criteria.

A two-day training program for prospective bidders will be organized prior to the bidders' conference. The program will introduce and provide insight on how to navigate the features of the e-tendering platform. Further explanation on how to utilize the platform for the tender process will be provided to bidders as required during the bidders' conference.

Minutes of the bidders' conference will be transmitted electronically promptly to all bidders, including those who are not present at the conference but have obtained the bid document. The minutes will also be published on REA's website. The minutes will include the text of the questions raised, without identifying the source, and the responses provided, together with any responses prepared after the meeting.

The DARES-PMU will organize group visits to the sites where the mini grids are to be installed. The PMU will also help bidders or any of their personnel who want to conduct site visits in collaboration with DisCos to access sites. Individual bidders shall bear the cost of site visits.

Step 3: Bid submission and opening

The PMU shall invite all proposers to submit bids (technical and financial parts) through the web-based platform. The bid submission will be in respect of the supply of clean, reliable, and sustainable electricity to communities in each lot while meeting the minimum technical requirements for system design appropriate for each site. Bidders will be provided with login credentials to view the information on the web-based platform. They will be given a deadline within which to prepare and submit their bids in the format presented on the platform.

Subject to appropriate justification, to be further detailed in the RfP, the PMU may, before the selection of the preferred bidders, reject any or all proposals submitted by all bidders for any lot. The PMU may also terminate the entire process without incurring liability with respect to the expenses incurred by bidders in the preparation of documents in response to the RfP.

Bids are expected to be submitted prior to the submission deadline. The technical part of bids will be opened after the deadline elapses. Bids received after the submission deadline will be rejected and returned unopened to the bidders.

Step 4: Evaluation of proposals

Upon the submission of bids, an evaluation committee will be constituted. The committee will evaluate bids in two steps (technical and financial parts):

1. Technical Part

Evaluation of the technical part will cover the following areas:

- Preliminary examination,
- Determination of the responsiveness of committee technical part, and
- Detailed evaluation of the technical part.

The evaluation report for the technical part shall be submitted to the World Bank for no objection. Following no objection, the PMU shall notify both responsive and nonresponsive bidders of the outcome of the evaluation of the technical part in writing.

2. Financial Part

Successful bidders shall be invited for the public opening of the financial part of their bids. In evaluating this part, the consideration of the financial submission shall be the subsidy amount offered by the bidder.

Combined Evaluation Report

The combined evaluation report for both technical and financial parts shall be prepared and submitted to the head of the PMU for review and for recommendation to the managing director for their approval. Thereafter, the approved report will be sent to the Bank for no objection.

Step 5: Notification of intention to award

Once the bid evaluation process is complete, REA will notify all bidders about that, as well as of its intention to award the contract to the most advantageous bidder. The most advantageous bidder is the bidder that meets the qualification criteria, whose bid has been determined to be substantially responsive to the bidding document, and that has the highest combined technical and financial score. There is a standstill period, which will be observed for 10 business days. The selection decision will be communicated to the most advantageous bidders through the web-based platform.

If there are no procurement-related complaints during the standstill period, the notification of award will be issued to the most advantageous bidders.

In the event that any bidder withdraws its bids before the grant agreement is signed, then that bidder shall forfeit the bid security submitted. In this case, the PMU may award the contract to the next most advantageous bidder.

Step 6: Grant agreement signing

After the most advantageous bidder has reviewed and accepted the grant agreement, REA and the bidder shall sign it. The grant agreement commits DARES to providing the grantee with the subsidy amount specified in their winning bid for each lot, provided the grantee satisfies all prerequisites to their milestone payments.

The bid security will be returned to all bidders upon signing of the grant agreement. The grantee will also be required to execute a tripartite agreement with the DisCo and community and/or execute a franchise agreement/PPA with the DisCos (approved by the NERC) to get onboarded on the DARES grant program.

Step 8: Verification and disbursement

The grant will be disbursed at the three milestones detailed in table 1.3.

Table 1.3 • Milestones for Grant Disbursement

Milestone	Activity	Percentage of grant
Milestone 1	Advance Payment Guarantee to accelerate deployment (at signing of grant agreement)	20
Milestone 2	Upon commissioning of the distributed energy resources asset and connection to the grid (12 months after the signing of the agreement), with at least 80% of connections as approved in the grant agreement	60
Milestone 3	Upon attaining an average daily minimum hours of supply from the plant over a 6-month period within a year after commissioning	20

The average daily minimum hours of supply will be determined at the RfP preparation stage.

DARES will maintain a roster of consultants for verifying design and installation, and for performing spot checks to ensure installation compliance. The consultants will be selected according to the terms of reference prepared by DARES in consultation with the World Bank. The performance security may be forfeited if a project has not been commissioned (households not receiving power) within the time period noted in the grant agreement.

Project developers receiving subsidies must ensure, as stipulated in the grant agreement, that the independent verification consultants for DARES have access to sites to inspect projects, including goods, works, sites, and construction. This includes inspection of physical assets and relevant documentation. DARES will follow up on any design and installation irregularities discovered through these independent verification exercises and seek remedial action from the project developers. The performance security may be forfeited in the event DARES concludes that the remedial action is inadequate.

State-Government-Led Rooftop Solar Solution

Overview of Subcomponent

This subcomponent will be supporting states in crafting their role in the energy transition agenda during decentralization. TA will be provided for developing the solar rooftop policy, building the capacity of state-level sector institutions, developing regulatory and procurement capacity, and preparing and implementing other policy frameworks. DARES will implement this subcomponent through the deployment of rooftop solar solutions at public hospitals in Lagos state. All eligible states can also avail the TA allocation for this subcomponent. The DARES-PMU will offer TA to Lagos State Electricity Board and other interested and eligible states.

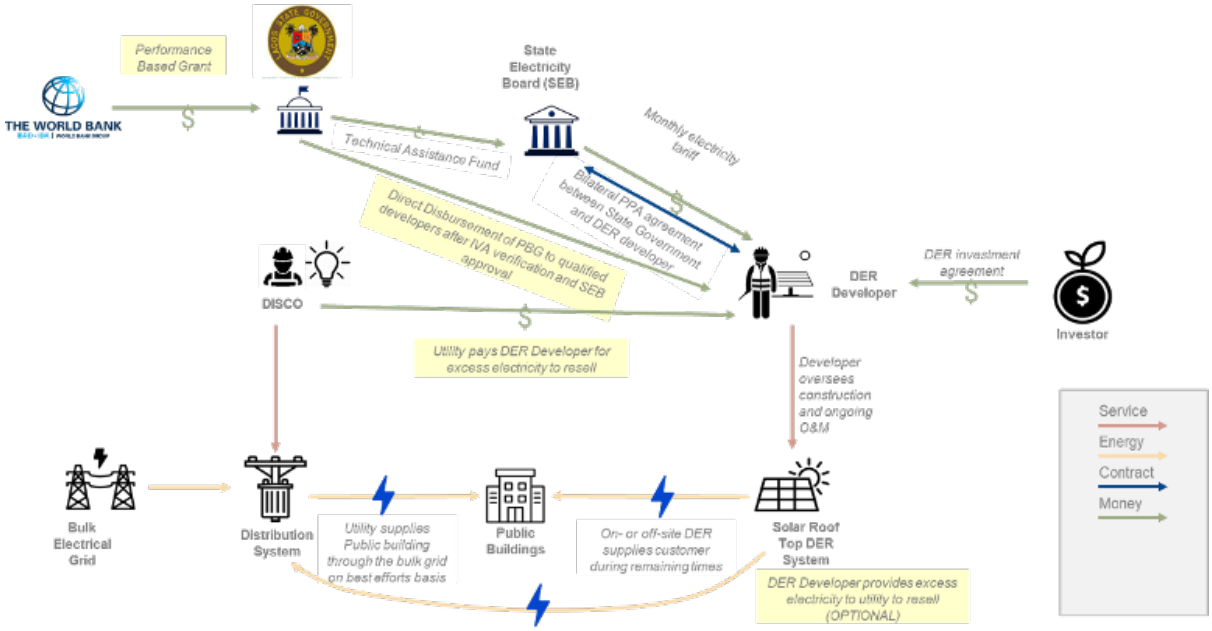
Lagos state will pilot the deployment of rooftop solar solutions at large general hospitals in the state. The deployment will be to demonstrate the technology under an energy-as-a-service model. Thirty-two general hospitals have been prioritized to be tendered. The prioritization has been based on information compiled on diesel-genset-powered general hospitals to determine the solar potential

and demand as part of this competitive tendering program. The information will be used to prepare lots for the bidding process based on their profile, roof material, location, demand, and so on.

Tender Structure

Figure 1.5 below shows the proposed arrangement to deploy rooftop solar solutions under an energy as a service business model.

Figure 1.5 • Rooftop Solar Solutions Model under the DARES MST



Note: DARES = Distributed Access through Renewables Energy Scale-Up; DER = distributed energy resources; IVA = Independent Verification Agency; MST = Minimum Subsidy Tender; O&M = operation and maintenance; PBG = performance-based grant; PPA = power purchase agreement.

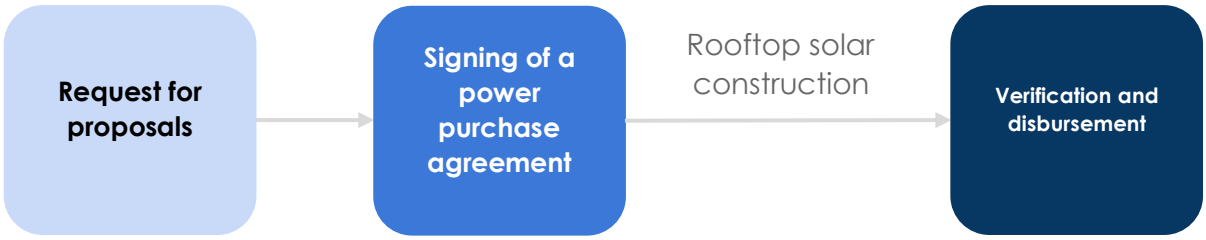
The rooftop solar solutions business structure is as follows:

- A developer will be a single entity, or a consortium, signing a PPA with Lagos state following the RfP process.
- Customers are general hospitals in each lot to be tendered.
- Investors will provide developers with private capital in the form of equity, debt, or both for a portion of the capital expenditure (CAPEX).
- DARES will provide a subsidy to cover a portion of the CAPEX. The tender process is competitive and on a lowest subsidy basis. In addition to the lowest subsidy, bidders will be required to meet the minimum technical requirements under DARES. Bidders will determine the amount of subsidy they need to build rooftop solar solutions, and the subsidy amount required by bidders shall represent the financial part of their bids. The combined evaluation for the technical part and the subsidy offered/financial part of bids will be used to determine the most advantageous bid.

Tender Implementation Process (Procurement Process)

Rooftop solar solutions in Lagos state will be implemented in three phases, as illustrated in figure 1.6.

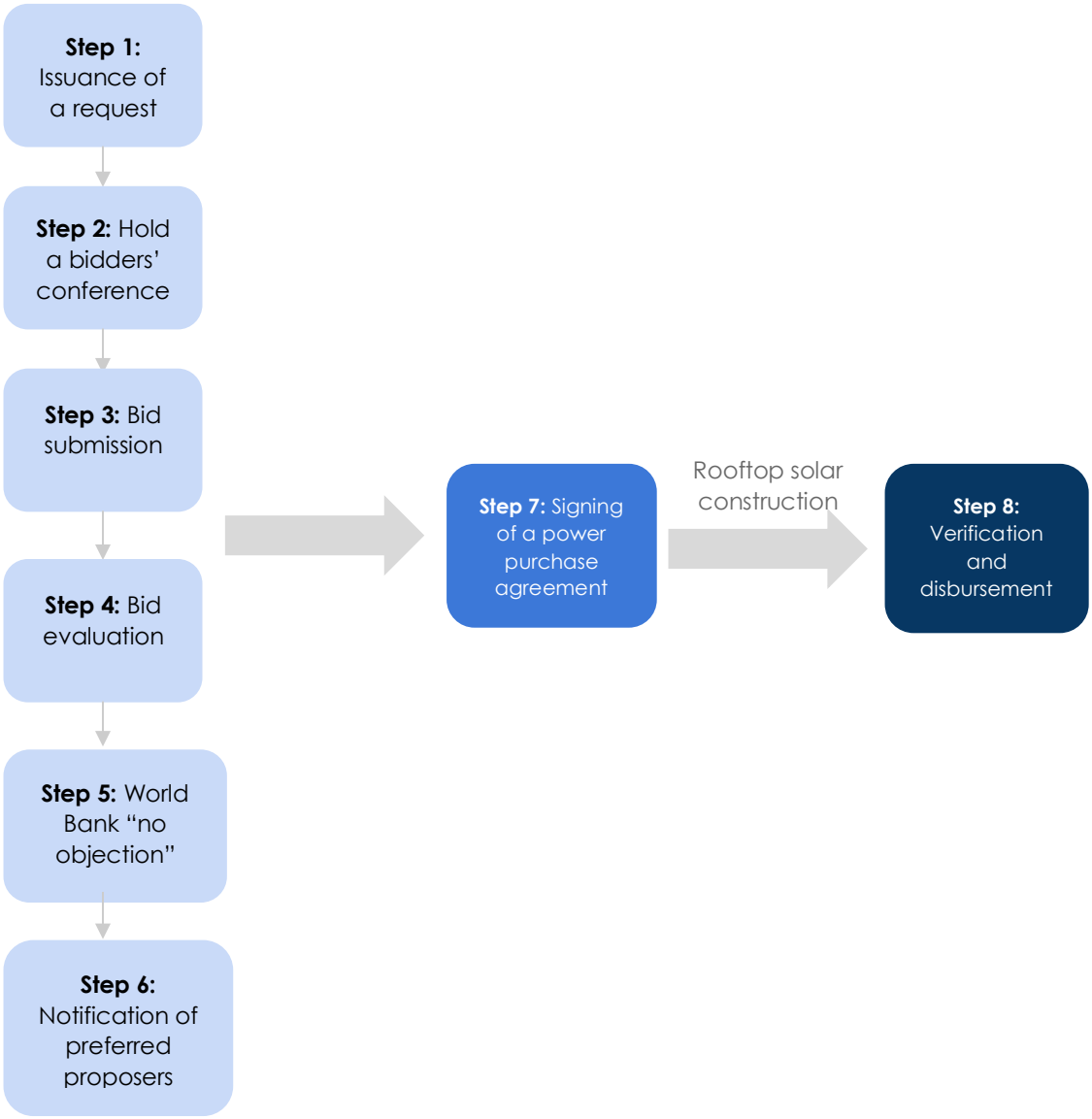
Figure 1.6 • Phases of Tender Implementation for Rooftop Solar Solutions in Lagos State



- **Request for proposals.** Prequalified applicants will be requested to submit proposals in response to the issued RfP document (to be provided during tender). Once proposals have been evaluated, the DARES state PMU will notify both successful and unsuccessful bidders on the outcome of the evaluation process. Thereafter, the successful bidders will be notified of the award of the tender. The tender process will be completed with the state PMU signing a grant agreement with the most advantageous bidder.
- **Signing of a PPA.** A draft PPA will be developed and sent to the successful bidder to review and accept. The state PMU will then sign the agreement with the bidder (to be provided during tender).
- **Rooftop solar construction, verification, and disbursement.** After the agreement is signed, the successful bidder will build the rooftop solar solutions. The grant will be disbursed upon verification that end users have been connected successfully and have been provided satisfactory service.

Figure 1.7 illustrates a detailed scheme of all the steps in the application and approval processes.

Figure 1.7 • Detailed Application and Approval Processes for the MST



Note: MST = Minimum Subsidy Tender.

Step 1: Issue a request for proposals

Prequalified bidders will be invited to submit separate proposals for each lot. Bidders will not be allowed to select specific hospitals within a lot but will have to submit bids for entire lots. Bidders wishing to offer any price reduction in terms of the subsidy requirement for the award of multiple lots, will be required to indicate this in their bids.

The technical requirements for each lot will be articulated in the RfP.

At this stage, a bid bond may be required to ensure that the preferred bidder remains committed to signing the PPA.

Bidders will be encouraged to partner with local companies. Careful consideration will be given to efficient solutions that reduce costs to customers, notably using local resources, in compliance with the World Bank's procurement processes.

Step 2: Hold a bidders' conference

A bidders' conference will be held after the RfP has been issued. This conference will allow the bidding process to be transparent and allow addressing any concerns of bidders. The bidders' conference will address, among others, requests for clarifications from bidders on the market potential for each lot in the RfP; explain the legal and regulatory framework applicable to this specific RfP; and explain the requirements of the bidding process, including the selection criteria.

A two-day training program for prospective bidders will be organized prior to the bidders' conference. The program will introduce and provide insight on how to navigate the features of the e-tendering platform. Further explanation on how to utilize the platform for the tender process will be provided to bidders as required during the bidders' conference.

Minutes of the bidders' conference will be transmitted electronically promptly to all bidders, including those who are not present at the conference but have obtained the bid document. The minutes will also be published on REA's website. The minutes will include the text of the questions raised, without identifying the source, and the responses provided, together with any responses prepared after the meeting.

The DARES state PMU will organize group visits to the sites where the rooftop solar solutions are to be installed. The PMU will also help bidders or any of their personnel who want to conduct site visits to access sites. Individual bidders shall bear the expenses of site visits.

Step 3: Bid submission and opening

The PMU shall invite all proposers to submit bids (technical and financial parts) through the web-based platform. The bid submission will be in respect of the supply of clean, reliable, and sustainable electricity through rooftop solutions to general hospitals in each lot while meeting the minimum technical requirements for system design appropriate for each institution. Bidders will be provided with login credentials to view the information on the web-based platform. They will be given a deadline within which to prepare and submit their bids in the format presented on the platform.

Subject to appropriate justification, to be further detailed in the RfP, the PMU may, before the selection of the preferred bidders, reject any or all bids submitted by all bidders for any lot. The PMU may also terminate the entire process without incurring liability with respect to the expenses incurred by bidders in the preparation of documents in response to the RfP.

Bids are expected to be submitted prior to the submission deadline. The technical part of bids will be opened immediately after the deadline elapses. Bids received after the submission deadline will be rejected and returned unopened to the bidders.

Step 4: Evaluation of proposals

Upon the submission of bids, a technical consultant appointed by the state government, or an owner engineer will evaluate the bids in two steps (technical and financial parts):

1. Technical Part

Evaluation of the technical part will cover the following areas:

- Preliminary examination,
- Determination of the responsiveness of the technical part,
- Eligibility and qualification of bidders, and
- Detailed evaluation of the technical part.

The evaluation report for the technical part shall be submitted to the World Bank for no objection. Following no objection, the PMU shall notify both responsive and nonresponsive bidders the outcome of the evaluation of the technical part in writing.

2. Financial Part

Successful bidders shall be invited for the public opening of the financial part of their bids. In evaluating the financial part, the consideration of the financial submission shall be the subsidy amount required by the bidder.

Combined Evaluation Report

The combined evaluation report for technical and financial parts shall be prepared and submitted to the state HPMU for review and for recommendation to the Commissioner of Energy for their approval. Thereafter, the approved report will be sent to the Bank for no objection via REA.

Step 5: Notification of intention to award

Once the bid evaluation process is complete, the state PMU will notify all bidders about that, as well as of its intention to award the contract to the most advantageous bidder. The most advantageous bidder is the bidder that meets the qualification criteria, whose bid has been determined to be substantially responsive to the bidding document, and that has the highest combined technical and financial score. There is a standstill period, which will be observed for 10 business days. The selection decision will be communicated to the most advantageous bidders through the web-based platform.

If there are no procurement-related complaints during the standstill period, the notification of award will be issued to the most advantageous bidders.

In the event any bidder withdraws their bids before the PPA is negotiated and signed, then the PMU may award the contract to the next most advantageous bidder.

Step 6: Signing of a power purchase agreement

After the most advantageous bidder has reviewed and accepted the PPA, the Lagos State Electricity Board or any other designated agency of the Lagos state government shall sign a PPA with the bidder. The agreement commits DARES to providing the developer with the subsidy amount specified in their winning bid for each lot, provided the developer satisfies all prerequisites to their milestone payments.

Step 8: Verification and disbursement

The subsidy will be disbursed in US dollars after the developer achieves the two milestones detailed in table 1.4.

Table 1.4 • Milestones for Subsidy Disbursement

Milestone	Activity	Percentage of subsidy
Milestone 1	At the deployment of the rooftop solar solution and upon achieving electrical connection of the hospital buildings captured in the demand assessment	80
Milestone 2	Upon attaining a target average daily minimum hours of supply from the rooftop solar solution over a six-month period within a year of commercial operation	20

DARES will maintain a roster of consultants for verifying design and installation verification, and for performing spot checks to ensure installation compliance. The consultants will be selected according to the terms of reference prepared by DARES in consultation with the World Bank. If a project has not been commissioned (institutions not receiving power) within the time period noted in the agreement, the developer may be penalized as will be agreed.

Project developers receiving subsidies must ensure, as stipulated in the agreement, that the independent verification consultants for DARES have access to sites to inspect projects, including goods, works, sites, and construction. This includes inspection of physical assets and relevant documentation. DARES will follow up on any design and installation irregularities discovered through these independent verification exercises and seek remedial action from the project developers. The penalty as may be agreed will be enforced in the event DARES concludes that the remedial action is inadequate .

I.C • Subcomponent 1.2: Performance-Based Grant Program

Program Description

This section describes the grant structure, terms, and conditions of the PBG program. It also describes the structure of the mini grid business, including the grant arrangement and an overview of the requirements. The PBG program will comprise PBGs for isolated and interconnected mini grids. While the PBGs for isolated mini grids will be implemented at the effectiveness of DARES, PBGs for interconnected mini grids will be implemented at a later date as grant calibration and program design is still in progress.

Performance-Based Grants for Isolated Mini Grids

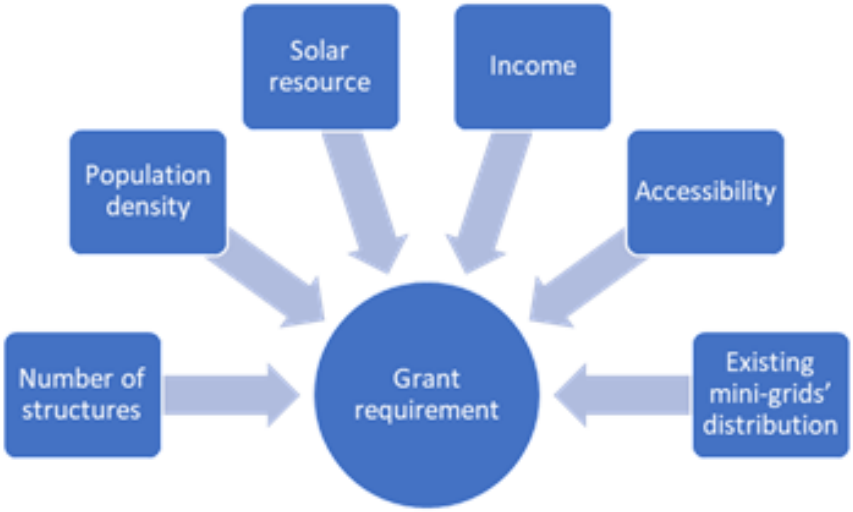
PBG Structure

Comprehensive Geospatial Analysis

To determine the PBG levels for off-grid sites in Nigeria, several criteria were assessed to verify whether the sites met the grant requirements. These criteria include availability of the solar resource, income levels, population density, numbers of building, proximity to urban areas, and distance to the nearest operational mini grid. Potential sites were identified using the Village Data Analytics (VIDA)

platform, a Geographic Information System (GIS)-based tool that provides comprehensive data on social, economic, and infrastructural factors, including photovoltaic potential, demographics, and existing infrastructure. VIDA helps policy makers and planners make data-driven decisions for energy planning. Additional data on operational mini grids were obtained from the REA database, and they helped identify areas already served by off-grid solutions as shown in figure 1.8.

Figure 1.8 • Selected Parameters for Grant-Level Calculations



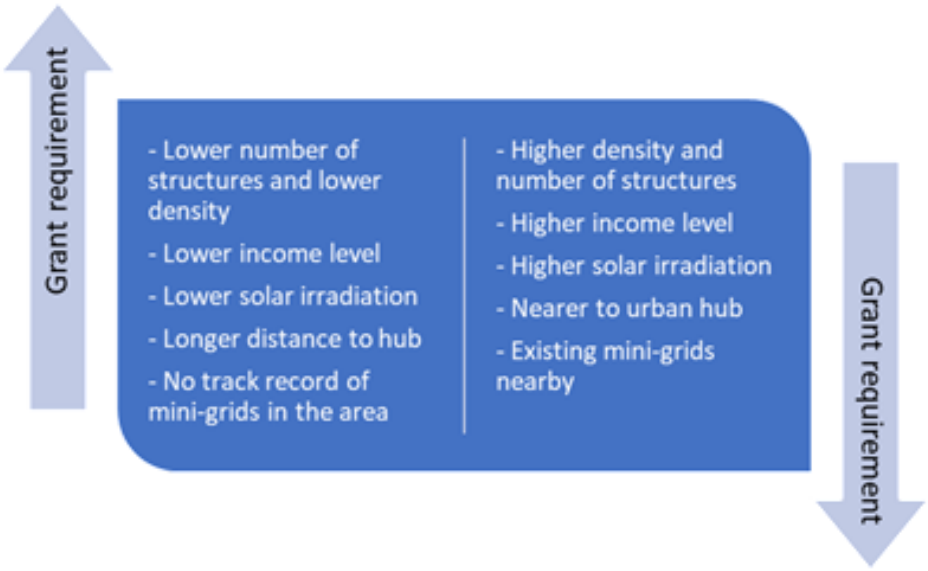
Site Categorization

All identified off-grid sites were subject to a scoring methodology, which was used to quantify their potential and to categorize them. Each parameter value was normalized to a score of 0 to 10, and minimum and maximum limits were set to neutralize the impact of outliers. These limits correspond to the 10th and 90th percentiles of a parameter's value range. Values below the minimum were assigned a score of 0, whereas values above the maximum were assigned a score of 10. For values between the minimum and maximum limits, scores were calculated using a linear or nonlinear formula.

After scoring each parameter, an overall score was determined. It was understood that not all parameters should be treated equally, since their influence on the grant requirements varies. For instance, the number of buildings is more critical than proximity to an existing mini grid and should thus be assigned a higher weight in the final evaluation.

A weighted average score is then calculated based on the estimated weights assigned to the six parameters. The entire scoring process is further explained and illustrated with figure 1.9 below:

Figure 1.9 • Expected Impact of Parameters on Grant-Level Requirements



The detailed scoring process for individual parameters, taking into account specific assumptions for each parameter based on their relationship and impact on the overall grant-level determination, is available in the "Nigeria DARES-RBF Structure & Implementation Report," an Energy Sector Management Assistance Program (ESMAP)-funded assignment, with Contract No. 208130. This document will be referred to in future for the adjustment of grants in the DARES project.

Once the scores were calculated for each respective site and its six parameters, the final scores were calculated using a weighted average. An example is showed in table 1.5.

Table 1.5 • Example: Scoring Methodology

Aspects	Minimum and maximum scores	Example score	Weights (%)
Number of structures	**0 to 10** 0 → Most disadvantageous 10 → Most advantageous	4	**40**
Population density		5	**25**
Income		3	**15**
Solar resource		7	**5**
Distance to the nearest hub		6	**10**
Existing mini grids' distribution		4	**5**
Weighted average score		**4.5**	

Classification of Results

The results of these calculations were classified into four groups. Each group was assigned a score from 0 to 10 and a name (table 1.6). Random sites from each group were then selected and financial modeling was used to compute the corresponding per-connection grant amount attributed to each group (see the grouping for off-grid sites).

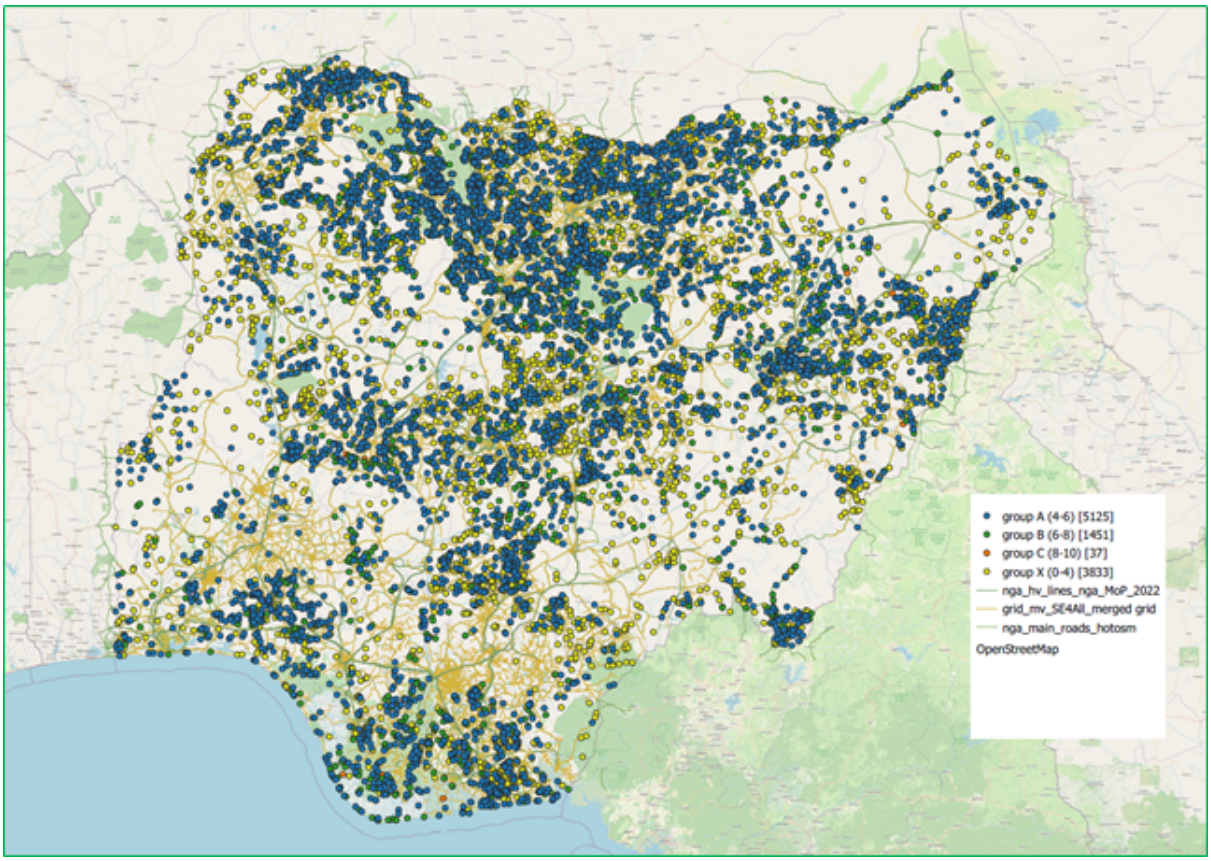
Table 1.6 • Group Definitions for Differentiated PBG Grant Levels

Group name	Overall site score	Total Number of off-grid AC mini grids ($/connection)	
X	0–4	3,833	Not applicable
A	4–6	5,125	Largest grant contribution
B	6–8	1,451	Medium grant contribution
C	8–10	37	Smallest grant contribution

Note: AC = alternating current; PBG = performance-based grant.

Based on this categorization, most sites had an average score of 4–6, indicating a larger grant contribution requirement. A significant number of sites fell within the lower category of 0–4. Sites scoring below 4 tend to be smaller, generate lower incomes, and are located in very remote areas. These sites were not found to be financially viable and would require deliberate productive use activity by the developers to improve their financial viability. Only a few sites scored between 8 and 10; they required the smallest amount of grant due to the generally high settlement density and higher wealth indexes of these large towns as shown in figure 1.10 below.

Figure 1.10 • GIS Mapping for All Off-Grid Sites per Category



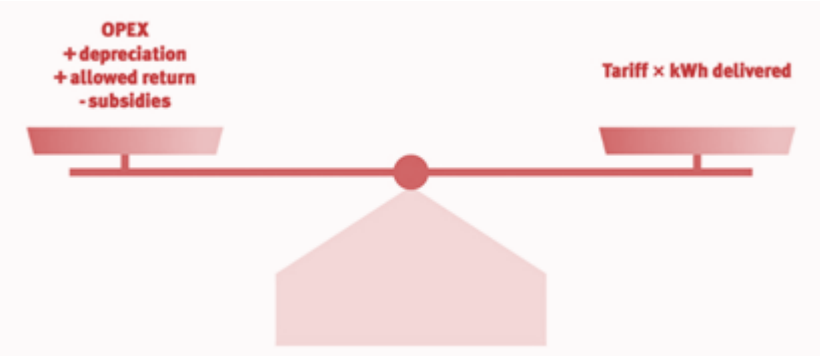
Note: GIS = geographic information system.

Cost of Service Financial Modeling

The CoS–based financial model is designed to determine the PBG per connection for various tariff levels in mini grid projects. In the case of Nigeria, the purpose of the CoS model is to help understand the cost implications of tariffs for mini grid electrification, based on the country's regulatory framework, including the NERC Mini Grid Regulations (2023) and the Multi-Year Tariff Order. The model calculates optimal grant allocation by evaluating operational and capital expenditures (OPEX and CAPEX) and customer demand profiles to ensure project sustainability. The model also assesses performance-based incentives necessary for operators to provide reliable and affordable electricity.

The CoS model, commonly used in the mini grid sector, enables operators to set tariffs that cover all development and operational costs as illustrated in figure 1.11 below.

Figure 1.11 • Illustrating the Cost of Service Financial Model



Note: kWh = kilowatt-hour; OPEX = operational expenditure.

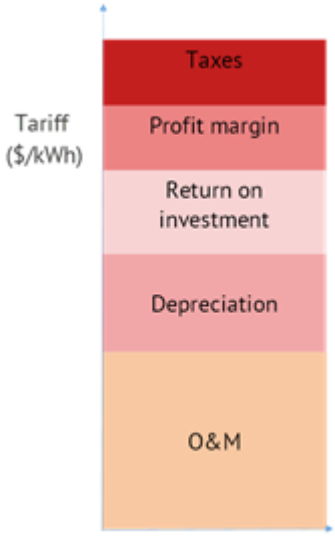
Under the CoS model, tariff is determined by dividing the allowed revenue by the total kilowatt-hours (kWh) delivered. The permitted revenue comprises OPEX, CAPEX depreciation, taxes, a return on privately financed assets, and a performance-related profit margin. Any subsidies, including those from RBF or other sources, are subtracted from this revenue. During the early stages of a mini grid project, development costs may be treated as CAPEX. The CoS can be calculated using this equation:

CoS = O&M Expenses + Depreciation + Taxes + (rate of return x Regulatory Asset Base) + PRPM

(Where CoS is cost of service; O&M is operation and maintenance and PRPM is performance-related profit margin).

The main building blocks of the tariff are illustrated in figure 1.12.

Figure 1.12 • Building Blocks of Mini Grid Tariff Using the CoS Model



Note: CoS = cost of service; kWh = kilowatt hour; O&M = operation and maintenance.

Grant Amount (Isolated AC Mini Grids and DC Mesh Grids)

Across off-grid sites for which incentives were determined based on the projected tariff, the intention is to see levelized tariff across off grid projects. Sensitivity analyses have been performed across a range of tariffs ($0.15–0.35/kWh). The grant values presented in table 1.7 are for alternating current (AC) mini grids and direct current (DC) mesh grids.

Table 1.7 • PBG Values for Isolated AC Mini Grids and DC Mesh Grids

Group name	AC mini grids ($)	DC mesh grids ($)
X	600	300
A	600	300
B	500	-
C	350	-

Note: AC = alternating current; DC = direct current; PBG = performance-based grant.

The proposals submitted by developers are expected to provide data of prevailing market fundamentals, which could be used to review the grant amount per connection. The grants will be reviewed annually.

PBG Process

Proposal Stage

A PBG will be available for eligible projects on a rolling basis and subject to funds available in the subcomponent. Predetermined grants will be provided to mini grid operators. To aid in proposal development, developers will receive a GIS map indicating grant levels differentiated based on site characteristics. These grant levels are determined using a standardized formula established by REA, as detailed in previous sessions. Similar to the NEP, Developers are also required to complete a financial model within the proposal submission platform. However, for DARES, a CoS-enabled financial model will be integrated within the platform. This updated financial model narrows the gap between the typical cash-flow-based financial model used in the NEP and the CoS-based tariff determination tool used by NERC, known as the Multi-Year Tariff Order tool.

After review, if an overall proposal meets REA's criteria, it will be approved and the grant amount will be ring-fenced for a specific period.

In exceptional cases, where developers believe a higher grant is necessary since the ground reality is different from the available geospatial data for specific parameters (e.g., an increase in the number of structures beyond what REA initially considered), they may submit their own evaluations with supporting evidence to REA. For instance, high-resolution drone-based images can provide an accurate count of structures. REA will then use the standardized formula to review and adjust the applicable grant level accordingly. The CoS model will reflect the grant category agreed between REA and a mini grid developer.

Disbursement Stage

The next stage is the disbursement stage. Here clear milestones and processes are set for developers to follow. This stage ensures that developers have a structured road map for achieving project goals:

- Milestone 1. The first milestone is the successful installation and commissioning of mini grids and connection of the targeted customers. Upon achieving this milestone, developers can access 80 percent of the grant amount. This amount will be ring-fenced for developers and the respective sites for 12 months from the signing of the grant contract. To access the grant amount, developers must fulfil successful installation and commissioning of mini grids, and afterwards, the number of connections made.
- Milestone 2. Mini grid developers will be able to unlock the remaining 20 percent of the grant amount (per connection) based on the achievement of a metric to verify plant performance: a "minimum consumption" requirement (calculated using the actual number of connections). In addition to achieving this metric, all connections achieved are expected to have consumption data above 0 kWh.

Mini grid developers will have to sell a minimum amount of kilowatt-hours based on the following requirement:

Minimum kWh sold in a year = (30 kWh x Total number of connections achieved)

A mini grid site is eligible to access the remaining 20 percent of the grant amount if it has sold up to the minimum kilowatt-hour requirement. This amount will be ring-fenced for two years from the time the grant agreement is signed.

Design Governance

The design of the program has prioritized the strategic deployment of energy access over open market competition in designing and planning for mini grids. In addition to other guidelines stated previously, the following additional guide will direct mini grid planning under this program:

- The minimum number of connections for a proposed mini grid project should not be less than 100.
- All projects must serve at least 70 percent of customers using the program-preferred technology.
- The program-preferred technology must be used to implement mini grid projects in the selected sites as disclosed on the program electronic platforms.
- Group B and Group C sites are exclusively for AC mini grids. Group A and Group X sites are further demarcated based on the program-preferred technology for AC mini grids and DC mesh grids, as disclosed on the program electronic platform.
- In addition to the above, AC mini grids can be used if preferred to DC mesh grids, but DC mesh grids should not be deployed in areas designated only for AC mini grids in Group A and Group X.

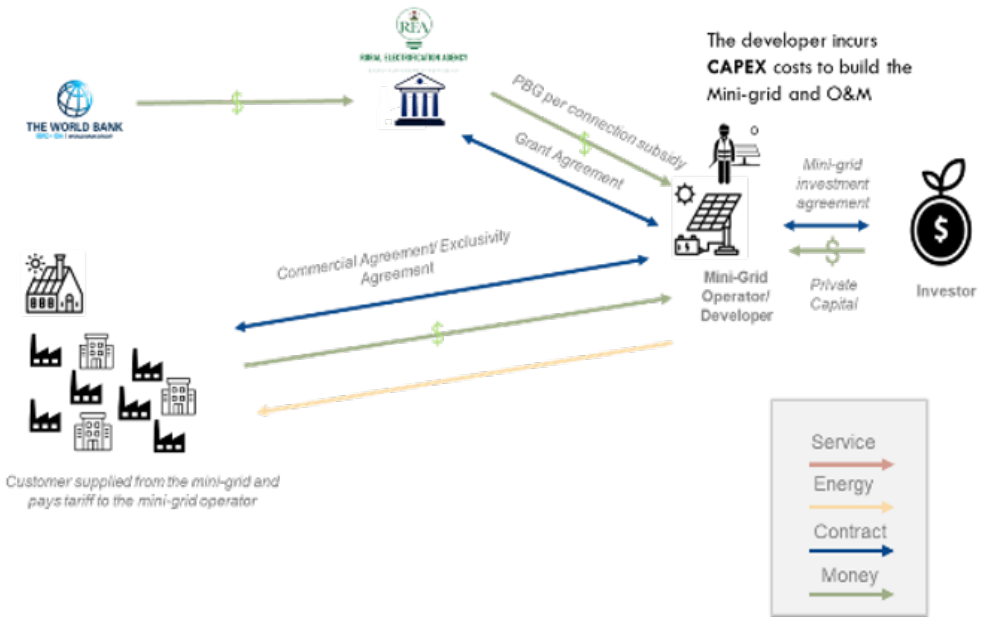
- Approval of multi-technology deployment will be reviewed on a case-by-case basis since the program is strategically in favor of the deployment of grid-code-compatible distribution assets within unserved and underserved communities.

Note that the final process for this activity is still to be determined.

PBG Business Structure

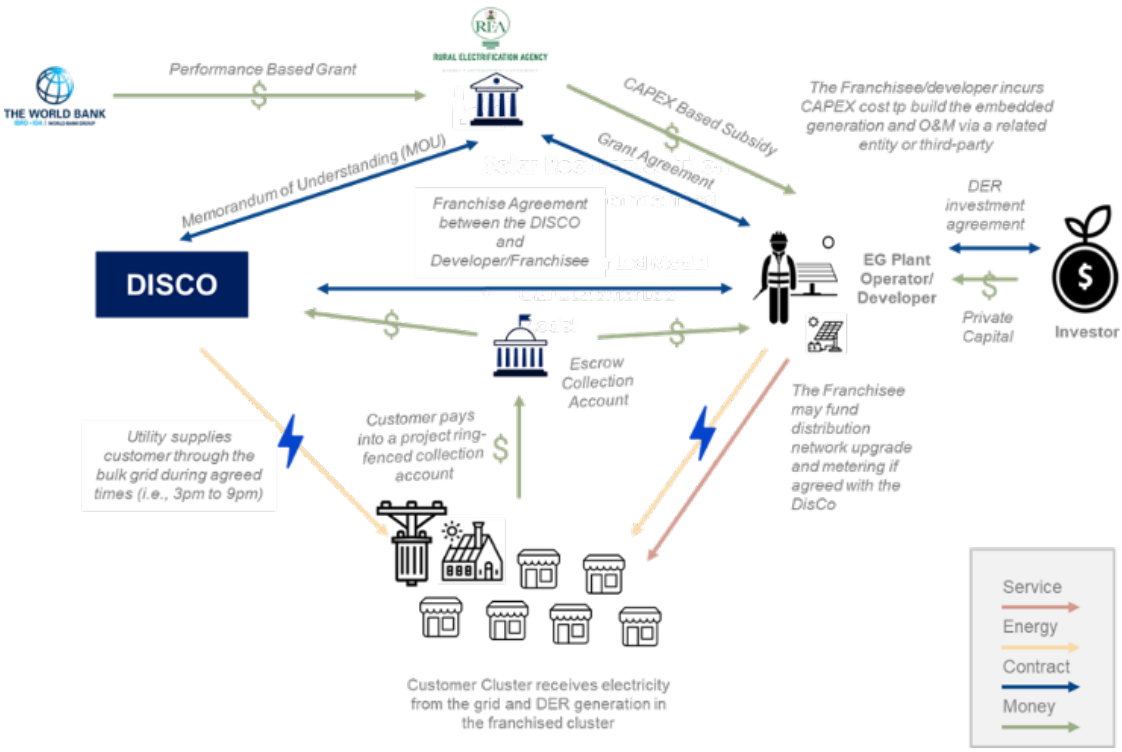
Figures 1.13 and 1.14 illustrate the structure of the isolated and interconnected mini grids businesses that have received PBGs, including the contractual arrangements between mini grid developers and other stakeholders.

Figure 1.13 • Isolated Mini Grids Model under DARES



Note: CAPEX = capital expenditure; DARES = Distributed Access through Renewables Energy Scale-Up; O&M = operation and maintenance; PBG = performance-based grant.

Figure 1.14 • Interconnected Mini Grids Model under DARES



Note: CAPEX = capital expenditure; DER = distributed energy resources; EG =Embedded generation DisCo = distribution company; MoU = memorandum of understanding; O&M = operation and maintenance.

The PBG mini grids business structure is as follows:

- Mini grid developers are at the center of the structure; they interact with all other stakeholders. A mini grid developer could be a single entity, or a consortium, signing a grant agreement with DARES following the successful completion of the RfP process.
- Mini grid developers may form special purpose vehicles, although this is not a requirement since such arrangements would be predicated on necessity.
- Customers are residential households and small and medium enterprises.
- The community and developer will sign an exclusivity agreement; the developer will subsequently sign a commercial agreement with the community. The commercial agreement will detail the NERC-approved tariff.
- For interconnected mini grids, the developers selected from the PBG process will provide the PMU with a tripartite agreement, which is executed with the DisCos and community, and/or a franchise agreement/PPA, which is executed with the DisCos (approved by NERC), before signing the grant agreement.
- Investors will provide mini grid developers with private capital in the form of equity, debt, or both for a portion of the CAPEX.
- DARES will provide a subsidy to cover a portion of the CAPEX.

Overview of Requirements

Projects may be eligible for PBGs based on the following principles:

- The program's initial focus is on solar hybrid systems. DARES may accept other renewable energy technologies at a later stage on a case-by-case basis.

- Mini grid projects in unserved and underserved areas will be eligible, including both isolated and interconnected mini grids as defined in NERC Mini Grid Regulations 2023.

An applicant will be eligible to apply for additional PBGs if it has completed previous projects according to the terms of the grant agreement. Where this is not the case, the applicant will not be considered for additional grants.

PBG Implementation Process

Applications for PBGs will be accepted on a rolling basis throughout the program once it is active and until available funds are exhausted. Figure 1.15 provides an overview of the four phases of the PBG process.

Figure 1.15 • Overview of the PBG Application and Approval Processes

The application process has two stages:

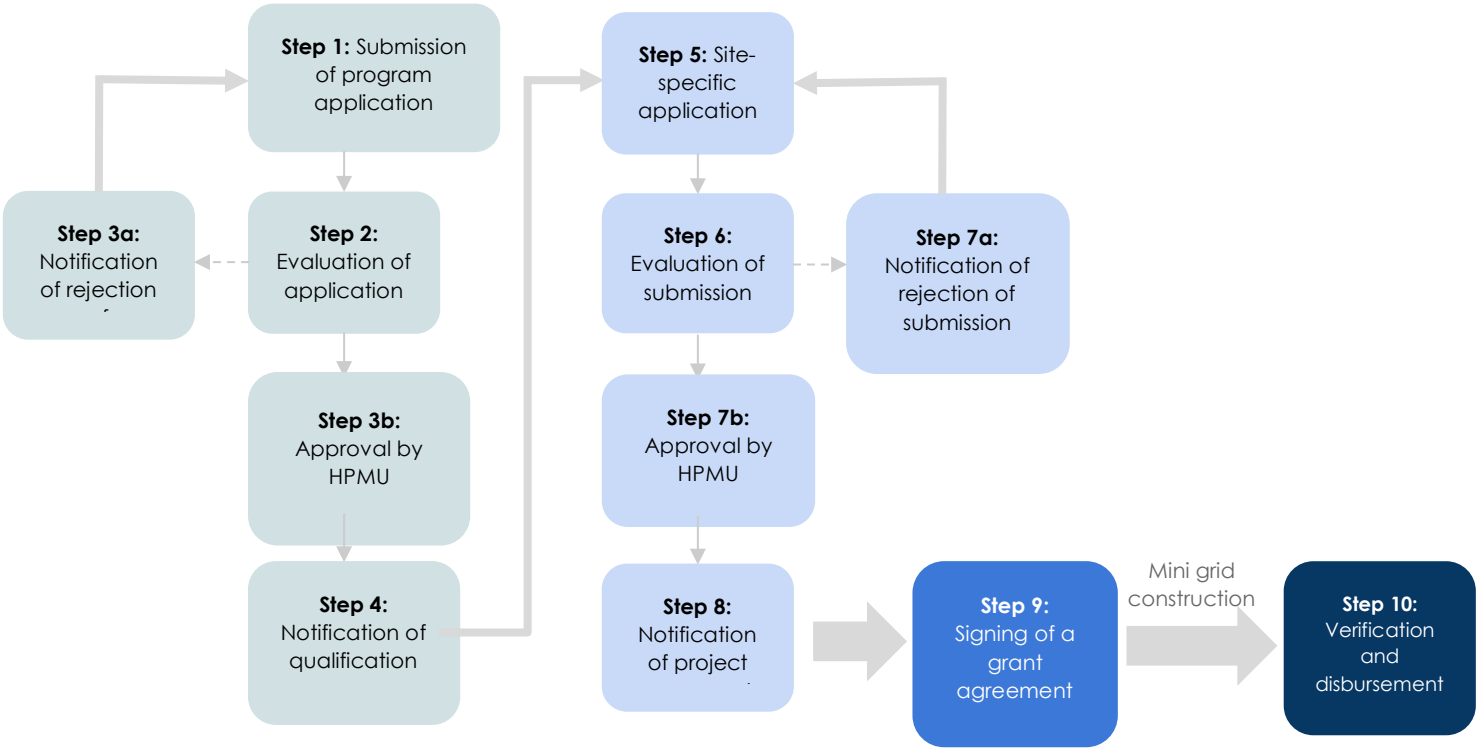
- **Qualification stage**. At this stage, applicants submit a program application. Applicants must demonstrate their eligibility and that they qualify to participate in the PBG program. Applicants must also submit a business plan detailing, among others, the company's business model and corporate financial plan (see Table 1.8).
- **Site-specific technical application stage**. Qualified applicants will be able to submit their grant applications for specific sites. All applications and submissions will be on the program's electronic platform.

Once an application has been approved, the process continues in two further stages:

- **Signing of a grant agreement.** DARES and the applicant will sign a grant agreement.
- **Verification and disbursement.** After the grant agreement is signed, the grantee will construct the mini grids. Grants will be disbursed for new connections achieved for isolated mini grids and as a percentage of the CAPEX for interconnected mini grids. Disbursement will be in two distinct phases upon verification that the grantee has reached the specified milestones (see Table 1.9).

Figure 1.16 illustrates a detailed scheme of the steps in the application and approval processes. Depending on the volume of applications, the process from submitting the program application to notification of project approval is expected to be completed within 75 business days.

Figure 1.16 • Detailed PBG Application and Approval Processes



Note: HPMU = head of the project management unit.

Qualification Stage

Qualification opening workshop

DARES will open the qualification stage on the web-based platform and hold a workshop to mark the opening of the PBG program. The objective of the workshop will be to provide training on the PBG program, the web-based platform, and the program's environmental and social requirements.

Step 1: Submission of program application

Applicants will complete and submit their PBG program applications on the web-based platform. Applicants will need to upload all the required documentation on the platform.

Interested applicants should first obtain the credentials to log into the web-based platform. They should do so by filling a form on REA's website at the following address: [https://dares.rea.gov.ng/]

All evaluations will be carried out on the web-based platform.

Qualification criteria

The qualification criteria are divided into five categories:

- Eligibility—pertaining to the nature and type of company and the individuals that may enter the program;

- E&S compliance—requirements to demonstrate compliance with the World Bank's and REA's safeguards;
- Technical capacity—relating to an applicant's experience;
- Financial capacity—relating to an applicant's capacity to obtain funding; and
- Business plan—must be submitted by all applicants and comply in form and substance with the template on the web-based platform.

Table 1.8 details the eligibility and qualification criteria, along with the evidence to be provided by applicants in their documents to prove they fulfil these criteria. A detailed document will be provided on the web-based application platform as a guide for developers on the program criteria.

Table 1.8 • Qualification Criteria for PBGs

Category	Criteria	Evidence	How the evidence will be evaluated	Which entity must satisfy the criteria
Eligibility	The applicant must be either: • A single legal entity, duly registered as a legal entity in Nigeria, having the capacity to enter into a contract under the laws of the Federal Republic of Nigeria or • A consortium that is incorporated as a legal entity in Nigeria, having the capacity to enter into a contract under the laws of the Federal Republic of Nigeria, or • An unincorporated consortium whose members are jointly and severally liable.	• For a single legal entity: – Articles of incorporation or – Documents of registration of the entity, or equivalent documents of constitution • For an incorporated consortium—Consortium agreement, stating that the members are jointly and severally liable • For an unincorporated consortium—Letter of intent to form a consortium, stating that the members are jointly and severally liable	Pass/fail	Applicant
	The applicant has no conflict of interest.	A signed application submission letter certifying that no officer of the relevant committees of the Rural Electrification Agency (REA) or the REA Board member is a former or present director, shareholder, or has any pecuniary interest in the applicant	Pass/fail	Each member of a consortium or single legal entity
	The applicant has not been declared ineligible by the World Bank and has not been excluded as a result of prohibition under the laws of the Federal Republic of Nigeria or by official regulations against commercial relations with the applicant's country, or by an act of compliance with the United Nations Security Council resolution.	A signed application submission letter, with self-certification and completed World Bank standard forms	Pass/fail	Each member of a consortium or single legal entity
	The applicant has declared information related to its history of litigation and has declared any pending litigation.	Completed World Bank template with its history of litigation and any pending litigation, if any	Pass/fail	Each member of a consortium or single legal entity

	The applicant has declared information related to its history of nonperforming contracts.	Completed World Bank template with a list of nonperforming contracts since January 2021, if any	Pass/fail	Each member of a consortium or single legal entity
Environmental and Social	Environmental and Social Management System (ESMS) compliance *("Compliance with the Environmental and Social Management Framework")*	E&S attestation letter (template to be uploaded on Odyssey). ESMS, including a stakeholder engagement plan and a labor management plan (updated template to be uploaded on Odyssey) Workers code of conduct relating to Sexual Exploitation and Abuse/Sexual Harassment (template to be uploaded on Odyssey)	Pass/fail	Each member of a consortium or single legal entity
	The applicant must be compliant with REA's and the World Bank's Environmental, Social, Health, and Safety standards.	Declaration that the applicant has a clean track record on E&S compliance, demonstrated by no environmental or labor violation or fines since January 2021	Pass/fail	Each member of a consortium or single legal entity
Technical	Experience developing mini grids	**Experience developing mini grids.** *The applicant has designed and built at least three mini grids* of at least 10 kW generation capacity, or one mini grid of at least 50 kW generation capacity, within the preceding 60 months, and these mini grids are still in operation* at the time of submission of this application:* ● A description of the mini grid systems (size, generation technology, number of customers, location, year of commercial operations date (COD), and annual gross generation) ● References (names and contact information) ● Proof of project completion (e.g., certificate of completion)	Pass/fail	At least one member of a consortium or single legal entity
	Experience operating mini grids	**Experience operating mini grids.** *The applicant has designed and built at least three mini grids* of at least 10 kW generation capacity, or one mini grid of at least 50 kW generation capacity, within the preceding 60 months and these mini grids are still in operation* at the time of submission of this application*: ● A description of the mini grid systems (size, generation technology, number of customers, location, year of COD, and	Pass/fail	At least one member of a consortium or single legal entity

		annual gross generation) ● References (names and contact information) ● Proof of operation (also applies to ongoing projects)		
	Experience operating mini grids for the Nigeria Electrification Project (NEP) returning operators	Submissions of reports on the operating conditions of all grant-funded projects under the NEP.	Pass/fail	A single entity or all the members of a consortium combined
Financial	Financial position	Good financial position demonstrated by audited financial statements for the past three years	Pass/fail	Each member of a consortium or single legal entity
	Liquid assets available	Minimum $50,000 or its Nigerian naira equivalent in liquid assets as shown in the financial statement for the year before the application	Pass/fail	A single entity or all the members of a consortium combined
	Ability to secure financing	Experience securing funding, demonstrated by having successfully raised at least $250,000 or its Nigerian naira equivalent in equity, debt, or a combination of both for at least one project in infrastructure within the preceding 60 months: ● A brief description of the project and the equity amount raised ● References (names and contact information) ● Proof of ability to secure funding (e.g., approval letter from financier, bank statement) ● Evidence of securing funding	Pass/fail	A single entity or all the members of a consortium combined

Note: For the purpose of evaluating an applicant's experience, "mini grids" are defined as systems with generation capacity between 10 kW and 10 MW, and network that distributes power to two or more customers. A mini grid in "operation now" is defined as serving customers exclusively, or in addition to the main grid, if the main grid arrived in the community previously served by the mini grid and the assets were bought out by the utility or decommissioned.

Step 2: Evaluation of applications

The PMU will evaluate program applications within 14 business days of their submission on the web-based platform. The PMU will follow these steps:

- **Notification of receipt.** Applicants will be notified of the completeness of submission through the web-based platform. Applicants will be informed of the commencement of evaluations once their submissions are complete.
- **Application evaluation.** Once an applicant's submission is complete, the PMU will immediately commence evaluations to verify the applicant's eligibility and qualification within 14 business days of notification of submission.

Step 3a: Notification of rejection of application

For applicants whose program applications were not approved, the PMU will notify them no later than the 14 business days of evaluation. Such applicants will have three options:

1. Decline to further pursue admission into the PBG program.
2. Make modifications to their program applications and resubmit them.
3. Challenge the assessment (see chapter 5 of REA's Environmental and Social Management Framework, ESMF5).

Resubmissions will be evaluated by the PMU within five business days from receiving notification of resubmission.

Step 3b: Approval by DARES HPMU

If a project application meets all the requirements, then the evaluation team will submit a request to the HPMU for its approval immediately after the conclusion of evaluations.

Step 4: Notification of qualification

The PMU will, within five business days of receiving a response from the HPMU, notify qualified applicants that they have been admitted into the PBG program or that they have been qualified on a conditional basis (specifying the conditions that would have to be met by the applicant and by when), and invite them to submit a site-specific technical application.

Site-Specific Technical Application Stage

Step 5: Submission of site-specific technical application

Once qualified applicants have been admitted into the PBG program, they may submit site-specific technical application for one or more projects at a time. The site-specific application will be completed on the web-based platform. It should include:

- Completed site-specific analysis (site details, estimated number of customers),
- Technical design of each project, and

- Environmental and social screening information and risk classification for sites.

Applicants will need to provide evidence of their compliance with regulations and the program requirements, including the following items (as will be detailed in the instructions for the site-specific technical application):

1. Proof of adequate insurance of project assets
2. Evidence of compliance with the minimum technical requirements
3. Evidence of compliance with E&S requirements, including proof of compliance with the Federal Ministry of Environment.

Step 6: Evaluation of site-specific technical application

The PMU will evaluate the site-specific technical applications within 21 business days of their submission on the web-based platform:

- **Notification of receipt.** Applicants will be notified of the completeness of submission through the web-based platform. Applicants will be informed of the commencement of evaluations once their submissions are complete.
- **Application evaluation.** Once an applicant's submission is complete, the PMU will immediately commence evaluations to verify their eligibility and qualification within 21 business days of notification of submission.

In case there is doubt regarding a project's eligibility, project developers are encouraged to contact the PMU as soon as possible, to seek its opinion on eligibility and the options to make the project eligible.

Step 7a: Notification of rejection of application

For applicants whose site-specific technical submissions were not approved, the PMU will notify them no later than 21 business days of evaluation. Such applicants will have three options:

a. Decline to further pursue a PBG for that particular project.
b. Make modifications to their site-specific technical applications or provide additional information as requested by the PMU, and resubmit the applications.
c. Challenge the assessment (see chapter 5 of REA's Environmental and Social Management Framework, ESMF7).

Resubmissions will be evaluated by the PMU within 10 business days from receiving notification of resubmission.

Step 7b: HPMU approval

If a project application meets all the requirements, then the evaluation team will submit a request with the HPMU for approval within five days of the conclusion of evaluations.

Step 8: Notification of project approval or conditional approval

The PMU will inform applicants of a positive, negative, or conditional outcome, and, as applicable, specify what additional processing is required before the application can be approved.

Step 9: Signing of a grant agreement

Applicants whose site-specific technical applications have been approved will then sign a grant agreement with DARES. The grant agreement will be standardized and nonnegotiable. The grant agreement will govern the terms and conditions for the disbursement of PBGs to projects. The terms of the contract will include the following:

- The grantee should commission the mini grids (build the mini grid and connect the first customers) within 12 months of signing the contract.
- The grantee should complete its targeted connections within 12 months of commissioning of mini grids. Connections made beyond this time frame will not be eligible for grants.

Step 10: Verification and disbursement

Once the grant agreement has been signed, the project developer will construct the mini grids and connect customers. The PBG will be disbursed in three tranches as shown in table 1.9.

Table 1.9 • Milestones for Grant Disbursement

Milestone	Activity	Percentage of grant
Milestone 1	Grant payable after the mini grid is commissioned based on the number of connections achieved	80
Milestone 2	Within 12 months after commissioning and achievement of a minimum consumption threshold to incentivize connection of customers with productive use of energy (*mesh grid excluded)	20
PUE grant (optional)	TBD	TBD
Capacity expansion grant (optional)	TBD	TBD

The balance payment will not be made unless the PMU or Independent Verification Agency has confirmed that the grantee has connected the required number of end users to the mini grids and met the minimum consumption target per connection. The payment due to the grantee will be adjusted accordingly if the required number of connections is not achieved.

Project developers need not submit all proofs of customer connection for a mini grid in one submission; instead, they may submit them over time as connections are achieved. They will be disbursed according to the schedule on which satisfactory customer connections are verified, provided these are submitted 21 months after the contract is signed. However, proofs of connection may not be submitted more than once per month.

DARES will maintain a roster of consultants for verifying design and installation, and for performing spot checks to ensure installation compliance. The consultants will be selected according to the terms of reference prepared by DARES with no objection from the World Bank. Project developers receiving PBGs must ensure, as stipulated in the grant agreement, that the independent verification consultants for DARES have access to sites to inspect projects, including goods, works, sites, and construction. This includes inspection of physical assets and relevant documentation. DARES will follow up on any design and installation irregularities discovered through these independent verification exercises and seek remedial action. DARES may suspend the project developer from the program if it concludes that the remedial action is unsuccessful.

Pathway to Scale Up—RESCO's

The DARES project will establish streamlined pathways of entry, project evaluation, and grant signing for entities demonstrating the capacity to undertake large projects. These entities must have planned projects and have a clearly defined work program that outlines funding, procurement, and resource capacity to deliver large portfolio projects totaling at least 5 MW of combined capacity. This initiative will be known as the RESCO Fasttrack Program.

Roundtable Meetings

Roundtable meetings will be held quarterly or on an as-needed basis to connect with existing and potential participants on the components under mini grids. The aim of the meetings will be to provide an avenue for developers and project stakeholders to discuss updates and specific challenges surrounding their projects.

Site Management and Administration

Under DARES, site management and administration are critical given the subcomponents under mini grids. As part of the lessons learned under the NEP, from site identification to tendering, transparency and collaboration among teams is necessary to ensure seamless and contention-free processes for the MST and PBG programs.

The DARES Project maintains different data sets containing market intelligence on sites: these include data transferred from the NEP, data supplied by development partners and DisCos, and in cases where the MST cannot be applied, the PMU will share site data from its repository with qualified Developers/RESCOs to facilitate efficient mini grid deployment.

Ideal Site Management Process Flow

The implementation strategy has several categories:

1. Application management

- Propose a system that ensures developers get clearance from DARES before signing exclusivity agreements after the tender process.
- Limit the number of sites a developer can upload at a time, which can only increase after those sites have been successfully developed and are operational.
- Thoroughly investigate/confirm financial capability claims, for example, request for an unencumbered line of credit from a local bank, a bank statement, or equivalent.
- Only audited financial statements of a bidding company would be acceptable.
- Create a mechanism (which could form a part of RfP requirements) to determine the financial investigation for joint venture submissions.
- Introduction of control in the procurement process. For example, a maximum number of sites to be contracted in a bidding round could be set, and a further increase could be approved upon determination of a certain level of physical development/performance. However, exceptions to this limit could be considered upon adequate justification and approval by a certain committee/group to be determined.
- Periodically review the duration of exclusivity agreements between developers and communities to avoid overlagging of project implementation timelines.
- Achievement of a certain level of physical development of contracted sites within a given period, below which site numbers could be reduced.

2. Stakeholder relations

- Early engagement with different state working groups/committees for tender sites.
- Institute alliance with relevant state groups to propose road rehabilitation for ease of access to project sites.
- Ensure regular engagement with DisCos and other relevant ministries, departments, and agencies to escalate discussion on interconnected mini grids for communities where grid infrastructure is present (defunct or not).
- Ascertain the current government electrification plans for off-grid communities given the autonomy granted to states.
- Provide the state government with evidence of the notification of an intent to develop a mini grid project.
- DisCos within the state or in locations for which energy and appliance audit as well as community engagement are conducted to be informed imminently to ascertain that there are no electrification plans in these communities in the foreseeable future.

3. Community engagement

- Viable communities to be informed or communicated with regularly following the outcomes of energy and appliance audits and community engagement
- Ensure regular follow-up on the submission of expression of interest letters by communities.

- DARES to strengthen partnerships with viable communities on the establishment of rural electricity user cooperatives.
- Continuous sensitization of communities with respect to the formation of power committees within them.
- Reestablish contact with communities under both programs (PBG and MST) to ensure appropriate accountability from developers that have signed exclusivity agreements with them.
- Periodically engage with developers to understand challenges and offer guidance as much as practicable.
- Understand the communal hierarchy and the process of electing the communal council or community head, to assist with potential disputes.

4. Intercomponent collaboration

- Ensure the sites proposed for PBGs are checked against prepared MST sites.
- Set up a wider committee that includes PMU and REA staff to appraise sites before signing of grants.
- Transparency in information sharing among relevant teams within the REA, DARES, and African Development Bank.
- Use of technology to ensure only authorized personnel have access to data, for data security and integrity.
- Provide the tools for all staff to perform official tasks for efficient data collection and storage.
- Conduct periodic roundtable sessions with developers once sites are identified for MST to avoid the submission of the same sites for consideration under PBGs.

5. Data collection and management

For data safety and integrity, the goal would be to develop a web-based interface, which would be used to input, store, and update community data and supports different database sources and Application Programming Interface requests. The interface will also support offline synchronization to ensure the database stays consistent and aggregates a pool of community profiles from guest users as a heavy lifting strategy. The system would be installed on mobile devices and would be able to execute entry point validation. Workflow can be triggered by events or user actions, and on-the-fly updates and iterations, as well as analytics, usage statistics, and ability report generation, would be possible.

The system's design would be such that it would allow collecting specific data; allow storing data including backup and data recovery; allow data sharing, collection, and privileges; enable privacy compliance; promote data security; facilitate audits; enable monitoring logs; and be able to identify vulnerabilities with a view to being proactive and not reactionary. The web-based platform could also be another layer to flag sites that overlap so as to prevent duplication.

Further, to prevent duplication and contention, an exclusivity agreement database should be created to determine what sites are spoken for or undergoing development.

CHAPTER II • Component 2: Stand-Alone Solar

The stand-alone solar (SAS) component of the Distributed Access through Renewable Energy Scale-up (DARES) Project builds on the foundations laid by the solar home system (SHS) component of the Nigeria Electrification Project (NEP). Previously, the NEP facilitated a $75 million results-based financing facility, which was dedicated to promoting the adoption of solar home systems across Nigeria. The NEP, which had households in urban, peri-urban, and rural areas as the beneficiaries, successfully supported the distribution of almost 1.1 million systems across all 36 states. The systems sold under the NEP ranged from Tier 1 to Tier 5; Tier 1 and 2 systems constituted over 80 percent of the claims under the project. While achieving considerable success, the initiative also provided valuable insights and lessons, which have significantly shaped the design of and strategy for the DARES SAS component.

The DARES SAS component is set to make SHSs even more available and affordable for households and micro, small, and medium enterprises (MSMEs). Additionally, it introduces support for the stand-alone productive use of equipment, especially targeting MSMEs and farmers in rural areas. The SAS component embraces a market-based, private sector–led approach and will continue to implement supply- and demand-side results-based financing along with catalytic grants. These financial mechanisms are designed to encourage solar companies to extend their reach into hard-to-reach, underserved areas, ensuring a broader and more inclusive energy access across the country.

II.A • Program Overview

Component 2 of DARES is a $300 million initiative to make SAS systems more available and affordable for households, MSMEs, and farmers in rural areas. The component focuses on rural and lower-income segments and includes strategic financing mechanisms to help boost energy access in rural and lower-income segments through strategic performance-based grants (PBGs), which are categorized into three distinct areas.

PBGs for SHSs. These grants are structured to reward successful deployments of solar technologies. They will ensure effective and efficient implementation of these systems. The grants are designed to promote the deployment of SHSs across varied scales to households and MSMEs in hard-to-reach or low-income segments. The program includes the following features:

- **Supply-side subsidies.** These are designed to help solar companies scale operations into hard-to-reach and underserved areas. Solar companies are provided with financial incentives based on the locations of the installed systems and specific performance criteria. The purpose of these subsidies is to bridge the gap between higher operational costs in remote areas and the need for affordable solar energy access, ensuring that small-scale users (Tiers 1–2) are adequately supported.
- **Demand-side subsidies.** The purpose of these subsidies is to make SHSs more affordable for the individuals listed in the national social register. Individuals below the poverty line, who typically cannot afford these systems without financial assistance, are targeted. This component will be launched at a later date.

PBGs for solar business systems. This category focuses on the deployment of higher-capacity solar systems tailored to meet the energy needs of specific productive entities, such as public facilities, economic clusters, and agro-processing zones. These solutions will be provided to individual users and will equip them with reliable, steady power to carry out daily operations. The program will address affordability and boost access through the introduction of the energy-as-a-service and lease-to-own models, which minimize up-front costs and distribute payments over time. These models will be vital in enabling these beneficiaries to adopt sustainable energy solutions without needing to make substantial initial investments. This component will be launched based on additional data and studies currently being conducted by the Rural Electrification Agency (REA).

PBGs for the productive use of energy technologies. The objective of this subcomponent is to increase the affordability and accessibility of technologies that significantly boost productivity and income generation. The subcomponent is specifically tailored to deploy solar-powered technologies that spur economic activities. A significant focus is on mature technologies such as solar water pumps, solar-powered cooling systems, and solar-powered electric mobility solutions. These technologies will be selected based on robust quality assurance frameworks and established market activities, ensuring they are ready for effective deployment. To facilitate this, the subcomponent will include a dedicated financing window and employ a reverse auction mechanism, thus promoting competitive pricing and efficient resource allocation.

Additionally, the subcomponent includes a separate funding window for emerging technologies—those with high potential impact but lacking substantial market presence or comprehensive quality assurance frameworks. The purpose of this adaptive support strategy is to nurture these technologies through targeted testing and evaluation, facilitating their evolution to meet rigorous quality and market standards. The approach ensures a balanced investment strategy, which aids in improving current solutions while fostering innovation and addressing future energy needs.

II.B • Subcomponent 2.1: Performance-Based Grants for Solar Home Systems—$100 million

The purpose of the PBGs for stand-alone SHSs is to substantially increase rural electrification by making Tier 1 and Tier 2 SHSs more available and affordable for households in rural and underserved areas. This initiative will support solar companies by covering their operational costs, encouraging their expansion into remote markets, and simultaneously reduce financial burdens for lower-income households through direct subsidies. By facilitating these strategic interventions, the program promotes the adoption of clean and reliable solar technology; the targeted communities gain more energy independence and economic resilience in turn. This subcomponent is strategically divided into two categories: supply-side subsidies and demand-side subsidies.

Supply-Side Subsidies

The purpose of these subsidies to encourage the distributors of SHSs to expand into rural markets without necessarily increasing prices for end users. This approach will help mitigate the high initial costs associated with extending supply chains into less accessible areas. Currently, servicing rural households is economically challenging since the additional operational costs would typically need to be transferred to

consumers, rendering products unaffordable. The incentives will differ based on the systems' location and size. To increase affordability and promote digital inclusion, additional incentives will be provided for systems sold through consumer financing mechanisms, such as pay as you go (PAYG). Both Tier 1 and Tier 2 systems qualify for supply-side subsidies for households, whereas larger SHSs, from Tiers 3–5, are eligible for these subsidies for productive users only.

Supply-Side Vulnerability Index and Subsidy Overview

The supply-side subsidies are meant to encourage the distribution of SAS systems by supporting private sector companies expand into rural and harder-to-reach markets, which often present significant economic challenges due to the high additional operational costs associated with serving rural households. Without intervention, these challenges can lead to these customers being left behind in the push for universal energy access.

To mitigate the barriers related to the high additional operational costs of serving rural households and speed up the rate at which rural and remote communities receive energy access, companies will be provided with targeted incentives to help them move into these underserved areas. Additional incentives will also be provided for systems sold through consumer financing mechanisms such as PAYG. Tier 1 and Tier 2 systems are eligible for supply-side subsidies, whereas larger SHSs, from Tiers 3–5, are reserved for productive users.

To better support the private sector in reaching challenging areas, a Supply-Side Vulnerability Index has been developed, specifically to guide the deployment of subsidies. Effective deployment of subsidies will help companies move into the most inaccessible areas and ensure that no communities are left behind in the clean energy transition.

Index Development

The comprehensive Supply-Side Vulnerability Index, which is meant to guide the deployment of subsidies and encourage the private sector's expansion into challenging rural markets, has been developed to identify regions where companies face the greatest operational challenges. This will help allocate subsidies more effectively and guarantee that resources are directed to the areas with the greatest need of support.

The development of the Supply-Side Vulnerability Index involved a thorough analysis of various socioeconomic and logistical factors that impact business operations in different regions. The index aggregates multiple data sets at the local government area (LGA) level, each weighted according to its significance in influencing the cost and feasibility of doing business. These data sets encompass a range of indicators, including logistics, security, energy access, potential market size, wealth, and market penetration.

The index generates a score for each LGA based on an evaluation of these factors. The score is then used to determine the appropriate level of subsidy. Higher scores indicate greater challenges, justifying a higher subsidy to compensate for the increased risks and costs faced by companies operating in the respective areas. This targeted approach ensures that subsidies are allocated in a way that maximizes their impact, driving the expansion of SHSs into the hardest-to-reach regions.

Supply-Side Indicators

Table 2.1 outlines the specific business challenges and socioeconomic indicators incorporated into the Supply-Side Vulnerability Index, along with the associated index components, indicators, data sources, and weights assigned to each factor. These components were carefully selected and weighted to reflect their relative importance in determining the difficulty and cost of operating in each LGA.

Table 2.1 • Overview of Elements Considered in Supply-Side Vulnerability Index

Supply-side business challenges	Index component	Indicator	Data source	Weight (%)
Logistics	Time to travel to main shipping ports	Minimum time to travel to the closest main shipping port from the LGA center	https://nigerianports.gov.ng/ports/	15
	Access to main road	Number of households farther than 500 meters from a main road	https://www.openstreetmap.org/	10
Security	Deadly armed conflicts (2021–23)	Number of deadly conflicts within an LGA (and in the close surrounding for small LGAs)	https://acleddata.com/	15
Energy access	Distance to an existing grid	Number of households farther than 2.5 kilometers from the MV grid	https://nigeriase4all.gov.ng/power-sector	15
Potential market size	Potential customer base	Buildings density (built-up area per square kilometer)	MAXAR	15
Wealth	Customers' ability to pay	Poverty index based on the social registry	REA/National Social Registry	10
Market penetration	Historical sales	Sales figure (2019–22) per total number of households	REA/Odyssey	20

Note: LGA = local government area; REA = Rural Electrification Agency.

Index Calculation and LGA Scoring

After the different business challenges and their respective weights have been determined, a score for individual LGAs is calculated. This score is based on the aggregated data from the table; each LGA is assigned a score between 0 and 1.

LGAs with higher scores indicate greater business challenges, greater market vulnerability, or low market penetration of SHSs based on REA data under the NEP. These areas are typically more difficult for companies to operate in, and have minimal presence of SHSs or solar market activity. Conversely, LGAs with lower scores indicate fewer challenges, some presence of an SHS market, and may not require as much financial support since they are more accessible and present fewer risks to private companies.

Ranking of LGAs

Based on the scoring methodology, each LGA is assigned a rank, which reflects the level of market vulnerability and the associated challenges for the penetration of SHSs in the solar market. The scores are then categorized into three levels of vulnerability to guide the allocation of subsidies. The breakdown is as shown in table 2.2.

Table 2.2 • LGA Vulnerability

Vulnerability level	Score range	Number of LGAs	Description
Low	0 to 0.3	109	Fewest challenges; some existing solar market activity
Medium	0.3 to 0.7	474	Moderate challenges; limited presence of solar home systems
High	0.7 to 1	136	Most challenging areas; minimal to no existing solar market

Note: LGA = local government area.

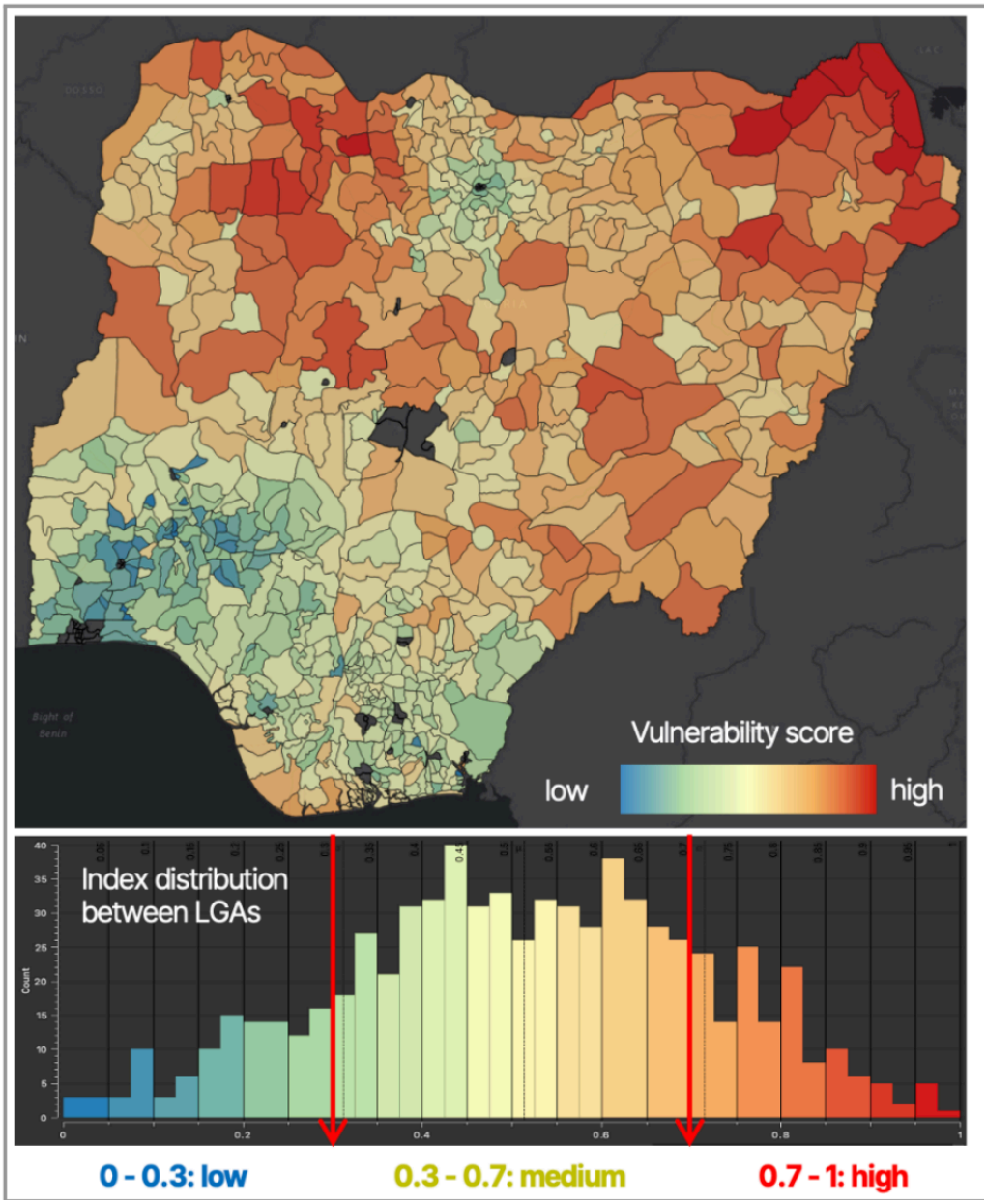
The decision to classify LGAs into the above three categories was made to ensure a clear and equitable distribution of subsidies across the different levels of market vulnerability. This approach makes it possible to target support to areas with the greatest need, helping to drive solar market growth in these areas.

The map and histogram in figure 2.1 illustrate the distribution of LGA-level vulnerability index scores. They show how these scores are translated into the three subsidy levels.

The gradient scale on the map indicates low, moderate, and high vulnerability levels. LGAs in dark colors represent urban areas, which have been excluded from the development of the index.

The histogram is a graphical representation of the number of LGAs at each vulnerability level and highlights the countrywide distribution of vulnerability index scores.

Figure 2.1 • Overview Map and Distribution (histogram) of LGA-level Vulnerability Index Scores and How They Are Translated to Three Subsidy Levels



The map in figure 2.1 shows the distribution of LGAs across the three vulnerability levels as determined by the scoring methodology.

Justification for Subsidy Levels

For Tiers 1 and 2, the subsidy levels have been determined based on an analysis of the additional costs and risks to distributors operating in different regions. The assumed total downstream cost, which

includes logistics, security, and other operational factors, is estimated to constitute about 40 percent of the total cost of delivering SHSs to these areas.

The analysis conducted suggests that:

- In low-vulnerability areas, the increase in incremental costs is expected to be relatively low. The subsidy is therefore 15 percent of the fixed price of an SHS.
- In moderate-vulnerability areas, costs are expected to increase by about 60 percent, justifying a subsidy of 25 percent of the fixed price of an SHS.
- In high-vulnerability areas, the increase in incremental costs could be as high as 100 percent. The subsidy is therefore 40 percent of the fixed price of an SHS.
- The subsidy levels have been designed to ensure that distributors are adequately compensated for the additional challenges of operating in more difficult areas and do not necessarily have to increase prices for end users.

Additionally, to further encourage the adoption of consumer financing, a top-up subsidy of 10 percent will be provided for systems sold on a PAYG basis, reflecting the additional financing risks and challenges associated with this payment model.

SHS Subsidy by Tier

The SHS subsidies focus on Tier 1 and Tier 2 systems, which are targeted at households and MSMEs, and are primarily intended to serve rural areas, where energy access is currently limited. Consistent with the World Bank's multitier framework, the program introduces further granularity by subdividing tiers to ensure more accurate subsidy distribution. Tiers are assigned a specific subsidy value based on the Supply-Side Index, which is described above. The table below provides the detailed subsidy amounts for each vulnerability level.

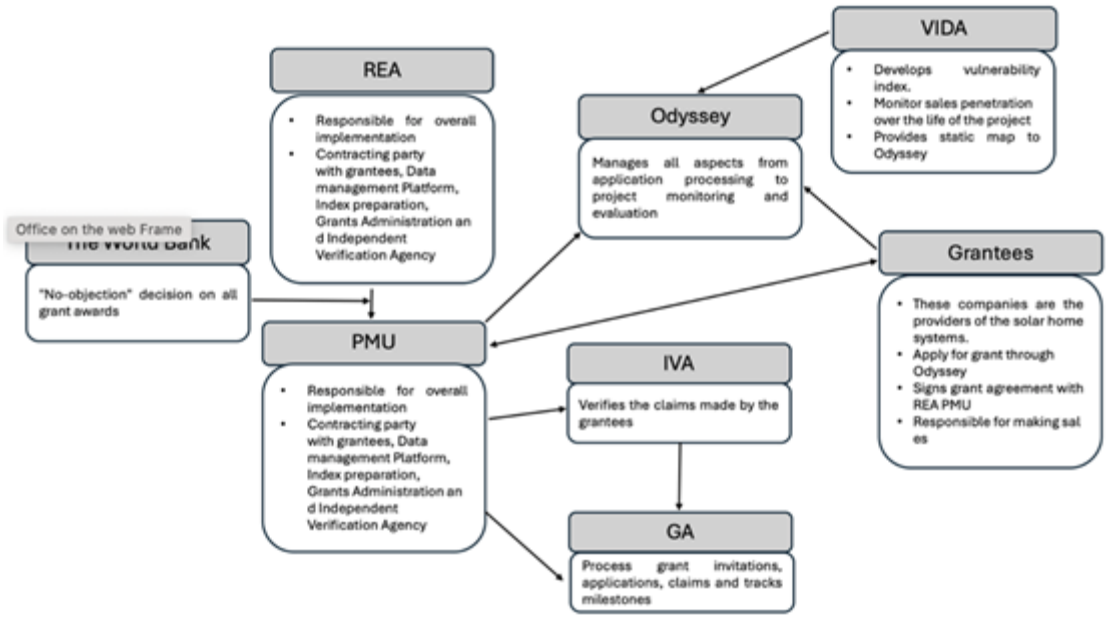
Table 2.3 • Supply Side Subsidy Values

Product Tiers		Tier 1		Tier 2		
		Level 1	Level 2	Level 3	Level 4	Level 5
Nominal Capacity (minimum)	Wp	3	12	21	50	100
Band	Wp	3 - 11	12 - 20	21 - 49	50 - 99	100 - 200
Minimum Service			Min 3 lamps, possible 1,000 lumen hours per day	Electrical, lighting, air circulation and phone charging are possible	Electrical, lighting, air circulation, television and phone charging are possible	Electrical, lighting, air circulation, television and phone charging are possible
Availability (day)	hrs	less than 4	at least 4	at least 4	at least 8	at least 8
Availability (evening)	hrs	less than 1	at least 1	at least 2	at least 3	at least 3
Average Retail Price	$	$ 44.00	$ 74.00	$ 128.00	$ 195.00	$ 393.00
Subsidy level 1 (40%)	$	$ 17.60	$ 29.60	$ 51.20	$ 78.00	$ 157.20
Subsidy level 2 (25%)	$	$ 11.00	$ 18.50	$ 32.00	$ 48.75	$ 98.25
Subsidy level 3 (15%)	$	$ 6.60	$ 11.10	$ 19.20	$ 29.25	$ 58.95
Pay-Go Incentive	$	10% Top-up provided to only systems sold on a pay-go basis after consecutive payments over a 3 month period				

Supply-Side Roles and Responsibilities

The diagram below depicts supply-side roles and responsibilities.

Figure 2.2 • Stakeholder roles and responsibilities for Stand-Alone Solar



1. VIDA. Village Data (VIDA) plays a critical role in the SHS component. It utilizes geospatial analysis to create a detailed index and map of Nigeria. The map categorizes regions into different vulnerability areas based on socioeconomic factors and historical sales data for SHSs. VIDA's responsibilities include:

1.1 Developing the vulnerability index. Creating and updating the index that identifies different levels of vulnerability across Nigeria.

1.2. Mapping vulnerability areas. Using the index to map out regions in Nigeria according to their vulnerability status; this will guide the deployment of solar systems.

1.3. Data provision. Providing these geospatial data to Odyssey to integrate into its data management platform.

1.4. Monitoring penetration levels. Assessing how effectively subsidies are reaching different areas and adjusting the strategy as necessary throughout the Project's life.

2. Odyssey. As the central data management platform for the Nigeria DARES project, Odyssey manages all aspects from application processing to project monitoring and evaluation. Odyssey's responsibilities include:

2.1. Integration of data from VIDA. Incorporating the vulnerability maps created by VIDA into its own platform so that users are informed about eligible areas for deploying solar systems.

2.2. Verification and monitoring. Utilizing the geospatial data to verify the locations of sales reported by companies, ensuring they are within the designated vulnerable areas.

2.3. Subsidy disbursement information. Providing companies with information on the specific subsidy levels available in different areas, based on the vulnerability index.

2.4. Sales tracking and reporting. Managing data on sales submissions from companies, verifying these submissions, and facilitating the subsidy payment process.

3. Rural Electrification Agency (REA) and grants administrator (GA). REA, supported by a GA, oversees the financial management and disbursement aspects of the subsidies. The responsibilities include:

3.1. Setting guidelines. Defining and revising the operational guidelines for the Project.

3.2. Evaluating applications. Reviewing applications and making decisions on subsidy awards.

3.3. Grant agreements. Facilitating and signing grant agreements with approved companies.

3.4. Subsidy payments. Administering and processing payments to companies based on verified sales reports from Odyssey.

3.5. Compliance and oversight. Ensuring that all parties adhere to the guidelines and standards set for the subsidy program.

3.6. Financial management. Managing the funds allocated for the subsidies and ensuring transparent financial reporting.

4. Off-grid solar companies. These companies are the providers of the SHSs. Their roles involve:

4.1. Application submission. Applying for participation in DARES.

4.2. Grant agreement signing. Entering into agreements with the REA upon approval.

4.3. Deployment of systems. Choosing sales locations based on the vulnerability areas shown on Odyssey.

4.4. Sales reporting. As part of their responsibilities, companies are responsible for reporting their sales on the Odyssey platform, including details such as sales location and volume.

4.5. Subsidy claims. Applying for subsidies by providing proof of sales in designated vulnerable areas, as verified by Odyssey.

4.6. Submitting high-resolution photographs (quarterly or every six months) enable appropriate documentation of sales and presentation of findings.

5. Independent verification agency (IVA). An IVA will be contracted by and report to the Project Management Unit (PMU), but it will work closely with the GA on the verification process. The IVA will be responsible for the following:

5.1. Verify new connections/sales of solar products from the claims submitted by grantees.

5.2. Submit completed verification reports to the GA for review and further processing.

5.3. Conduct spot checks of systems within a defined time frame.

5.4. Report and follow up on grievances recorded to ensure issues are addressed timely and to the satisfaction of the Project and customers.

6. Grants administrator. A GA firm will report to the PMU and will be responsible for:

6.1. Administer grants and track grant allocation to grantees.

6.2. Receive applications submitted online by private developers.

6.3. Screen applicants against eligibility criteria for prequalification.

6.4. Request and review grantee reports on (i) their claims requests for output-based grants and (ii) tracking grantees' progress toward achieving milestones and results.

6.5. Assist the PMU with the contracting of grantees.

6.6. Prepare disbursement forecasts and disbursement instructions to the PMU.

6.7. Provide fund oversight functions on the trend of disbursements versus companies' forecasts submitted during the application phase.

6.8. Quarterly presenting to the PMU on the position of projects as it covers disbursements, targets, and the overall position based on deliverables.

Supply-Side Eligibility Criteria

Companies that participated under the NEP will have to reapply to prequalify to participate under DARES. To participate in the PBG program, solar companies must demonstrate their contribution to advancing the solar market in Nigeria. This section outlines the eligibility criteria for companies and products, the application process, and the required prequalification procedures, which include the following parameters for verifying that the participating companies meet the high standards expected for system deployment and customer engagement:

Company. Identify the company, the governance structures, the key people. Confirm regulatory compliance, financial standing, and performance under the NEP.

Customer identification and data sharing. Willingness to track and share essential customer data in a prescribed format in collaboration with the GA and data management database. The data include, for example, the precise locations of systems, customer profiles, sales information, and sex-disaggregated data.

Customer services. Evidence of the ability to effectively provide pre- and after-sales service to those customers that are acquired, including easy and practical warranty service. With a strong focus on serving low-income and underserved areas.

Operational scale. Evidence of the ability to achieve the minimum required level of sales. In addition, outline strategies and capabilities for expanding operations into hard-to-reach areas and low-income segments. Transparent pricing strategies, efficient distribution networks, and last-mile delivery capabilities are essential, and collaborative arrangements with local organizations for reaching very remote rural areas are highly encouraged.

Skills and experience. Relevant experience of the company and the key people for building scale in the private SHS market.

Product scope. Only prequalified SHS products that qualify for Tier 1 and Tier 2 systems defined by the World Bank's multitier framework will be admitted into the program. Systems will be admitted based on their service and capacity. To be eligible, each SHS product must be certified compliant with Verasol certification.

Environmental and social risk management. Evidence that an environmental and social management system is established and functioning, and risks are mitigated, including proper e-waste management.

Overview of the Selection Process

This section describes the steps for selecting eligible companies for the PBGs for SHSs.

Application Process and Scoring

Companies will be able to apply by following the link on the REA's website. They can learn more about the program and the application process on the website. They can also request login credentials to the online application, provided they fulfil the basic criteria included on the landing page, if they do not have them already through the NEP.

Upon the submission of basic company data (e.g., proof that the company is registered and in the business of deploying SAS solutions), Applicants will receive login credentials, with which they can access the PBG application. The PBG application should be completed and submitted for review. Applications for PBGs will be submitted on a rolling basis, and the GA will evaluate them within four weeks of the time of application. The timeline will be monitored by the data management platform, Odyssey. Companies wishing to participate in the demand-side subsidy pilot will be encouraged to include additional information to be eligible.

Table 2.4 outlines the sections in the application that are relevant to prequalification for the PBGs. It follows the eligibility criteria above and describes the weighted scoring. It is important to know that in this evaluation, companies are not ranked but admitted or rejected subject to whether they have the minimum score or not. Companies are evaluated based on the criteria below. The detailed set of criteria and the scoring system are included in the evaluation form.

Table 2.4 • Applications Sections Relevant to Pre-Qualifying for PBGs

Prequalification for PBGs	Section requirement /weighting	Scoring threshold
A: Company		
Company details	Mandatory	Complete and compliant
Value chain and product tracking	Mandatory	
Customer service	Mandatory	
Financial resources	Mandatory	
Operational scale	Mandatory	

Skills and experience*	Mandatory	
B: Product eligibility	Mandatory	Approved by evaluation team.
C: Environmental and social (E&S) management	Mandatory	Meets or exceeds the minimum standard (functioning ESMS in line with DARES requirements; please see below for details)
D: Acceptance of other terms for the grants (regulatory, auditing, etc.)	Mandatory	Complete and compliant
E: Background checks	Mandatory	Complete consent and identifications Satisfactory results of checks

*For DSS, companies will outline their skills and strategies for reaching low-income segments.
Note: DARES = Distributed Access through Renewable Energy Scale-up; ESMS = Environmental and Social Management System; PBG = performance-based grant.

Applicable Environmental and Social Requirements

1. Regulatory, administrative, and legal framework of Nigeria, including federal, state, and local legislation, as well as international treaties, acts, and conventions.

2. **Exclusion criteria.** SHS companies will not be supported if they are involved in:

- Production or activities involving forced labor,
- Production or activities involving child labor, and
- Cross-border trade in waste and waste products, unless compliant with the Basel Convention and the underlying regulations.

E&S Qualification Criteria

- Have a good track record in environmental and social (E&S) management, meaning no E&S-related fines, no records of E&S violations, no litigation, or no pending litigations in the past three years
- Have an institutional Environmental and Social Management System (ESMS) that meets the requirements of the REA and World Bank and includes:
  - A human resources policy;
  - Policy/guidelines for occupational safety and health;
  - A battery collection/recycling policy;
  - An agreement/memorandum of understanding with a product responsibility organization approved by the National Environmental Standards and Regulations Enforcement Agency;
  - A gender inclusion policy;
  - Attestation of good E&S standing for the past three years;
  - A customer engagement plan:
    - Warranty cover (five years minimum) and
    - How customers can call up on warranty;

- Have the organizational capacity to implement such an ESMS; and
- Willing to participate in E&S capacity-building activities hosted by DARES should DARES deem necessary.

Evaluation Process

The evaluation process conducted by the REA-PMU and GA will follow the steps described below.

Step 1: Submission of applications

Each company that requests access will be provided with login credentials and step-by-step instructions on how to apply. This information will also be provided on the websites of the REA and DARES. Applicants shall submit completed applications on the Odyssey platform on a rolling basis. The application page will only be closed to Applicants during the screening and review stage and at the approval stage, following the go-ahead from the evaluation committee.

Step 2: Registering and logging of applications

All applications will be logged and registered automatically as received.

Step 3: Compliance check

A preliminary check will be performed to verify that all mandatory requirements of application have been met. The full evaluation can proceed if all requirements have been met. If not, the application is rejected and a request for resubmission/clarification is sent to the Applicant.

Step 4: Evaluation

The evaluation committee at this stage will conduct an in-depth review of the documents provided by Applicants. This process can take anything between 2 and 4 weeks, and Applicants will be scored based on the documents provided. For an application to be deemed successful, an average of 80 percent across all qualification requirements will be needed.

Step 5: SHS quality assurance

Tier 1 and Tier 2 SHSs with current Verasol certification are eligible. If a current certificate is presented, the technical specialist will verify its authenticity.

Step 6: Scoring of applications

The GA or each member of the evaluation panel shall evaluate and score each application individually. Scores should be recorded with comments in the evaluation template. Each evaluator uses the detailed template to develop scores for individual sections according to the weighted score matrix above. For each application, each evaluator will then produce a single score.

Step 7: Consolidation of evaluations

The evaluations of individual team members will be consolidated:

1. If all evaluators rate an Applicant as noncompliant, then they shall not be processed further. A rejection letter should be sent to the company to notify them that their application was unsuccessful [reference to the rejection letter].

2. If all evaluators rate an Applicant above 70 percent, and they also qualify on all the other pass/fail criteria, then the evaluation can proceed to background check.
3. If evaluations are mixed, then the differences will be discussed and a final decision should be made.

Step 8: Background check

Background checks are conducted alongside the evaluation process. A reputable firm should conduct these checks, ensuring all participants adhere to the highest standards of integrity and compliance. The checks are critical for verifying that no government officials are involved with Applicant companies, identifying potential conflicts of interest, and ensuring no connections to terrorist activities. As part of this process, a thorough review of company directors is conducted to assess their individual and collective compliance with legal and ethical standards. Additionally, an adverse media screening is performed to identify any negative press coverage concerning a company or its directors. Any concerning findings will be evaluated by a compliance committee, which will then determine the necessary actions, which range from further inquiries to potential disqualification of the company from the grants program, depending on the severity and relevance of the issues uncovered.

Step 9: SHS tier and subsidy amount

Companies passing the prequalification steps shall be assigned to one of the following tiers to determine the applicable level of PBGs. The assignment also considers the index level of the subsidy. A top-up subsidy of 10 percent will be added to any system sold on a PAYG basis—this will be to incentivize the adoption of consumer financing mechanisms. The proposed amounts per system will be revised every 12–18 months once market penetration levels are determined via VIDA.

Step 10: Recommendation

Upon screening, review, and evaluation of Applicants, the selection panel will provide the REA-PMU with a list of the applicant companies in a summarized and detailed form, with recommendations for each company.

For individual applicants and for each of their SHSs, the recommendations shall be one of the following:

- Successful
- Unsuccessful
- On hold/awaiting clarification
- Ongoing

The technical team within the REA-PMU will review the GA's recommendations to create a final list of approved applications to be prequalified for the grants.

Step 11: No objection

The World Bank will receive the recommended selection of the prequalified Applicants to provide no objection. Once no objection is received, the companies can proceed to signing a grant agreement.

Grant Agreement

The legal consultants and the REA legal team will prepare and share the contract grant agreement template with the grantee companies. The contract grant agreement will also include a data sharing agreement (DSA) to govern all aspects of data sharing under DARES. A DSA, which is drafted by Open Data Services, the REA legal team, and the World Bank legal team, is a contract that defines the purpose for which data is shared between organizations and the terms under which it is processed and used. DSAs facilitate data sharing within agreed parameters that ensure compliance with relevant laws, regulations, and ethical codes, and satisfy the requirements, restrictions, and needs of the parties to them.

Claims Management Process

Once the grant agreement is signed, companies can only claim sales made after the date on which the grant agreement was executed. The process for claiming grants includes the steps described below.

Step 1: Submitting a grant claim

Grantees may submit claims for the payment of PBGs once every month. Claims submitted between the 1st and the 15th of a month will be processed in the same month; otherwise, they will be processed the next month.

The claims log will include a standard report format on Odyssey. It will show a summary of the number of systems by type, and a detailed database for individual systems/customers with full details for the audits and verifications to be conducted, including system model, serial number, and complete customer details with a focus on the system's location. The claims log will be completed and submitted online.

Step 2: Compliance

The GA firm will be able to access the claims logged by the providers in the software management portal and verify that claims are compliant. Noncompliant claims will be returned to the grantees to rectify and resubmit.

To be compliant, each claim must meet the following requirements:

- Claims are only for systems sold prior to the last day of the previous month.
- Claims are only for systems sold in the previous three months.
- Claims are only for systems that are prequalified.
- The correct amount of grant is claimed for each system.
- The total claim amount is calculated correctly.
- Claims include verifiable Global Positioning System (GPS) coordinates to at least six decimal places, for verification that the locations of sales have been input correctly.

Claims must meet the minimum claim size threshold (currently at least 100 units per month).

Step 3: Verification process

The rules for determining the type and timing of the required audits are described in the section Verification and Monitoring of Grantee Performance.

If an audit step is needed before making a payment to a grantee, then an audit from the IVA should be requested. Once the audit report has been prepared and the GA has received it, the process can proceed to Step 4.

Step 4: Recommend payment

The GA firm will prepare payment advice notes every week based on a review of the remotely verified claims and the verified claims submitted by the IVA. All grant claims that are ready to be paid (i.e., not still under audit) will be provided to the PMU.

Step 5: Review of payment recommendation

The disbursement recommendation prepared by the GA will be shared with the PMU and finance team for review. This serves as the final layer of checks to ensure compliance. The PMU, finance team, and the GA will review the numbers per company in the disbursement recommendation and compare against the verification results and the grant amount per unit sold in the different categories.

Step 6: Approval and no objection

The PMU will forward the final version of the disbursement recommendation to the head of the PMU, the managing director/chief executive officer of the REA, and the World Bank Task Team Lead for approvals and no objections. The document is reviewed by all parties and approvals are granted via electronic mail (World Bank) and physical sign-off (REA and PMU), before the disbursement recommendation is forwarded to the finance team for the final disbursement.

Step 7: Disbursement

Once all approvals have been granted, the disbursement recommendation is forwarded to the finance team for payment processing. The payment process can be divided into two types:

- Disbursements through the World Bank. The World Bank processes payments of $100,000 and above through its client's connection platform.
- Disbursements through the Central Bank of Nigeria (CBN). Disbursements of below $100,000 will be processed through the CBN.

Both modes of disbursement generally have a 1- to 7-day processing and release period.

Verification

The verification process is integral to the integrity and success of the DARES PBG program. It ensures meticulous adherence to the program criteria and appropriate fund allocation. As part of the verification process, companies will need to submit the locations of individual installed systems. Odyssey will verify that the systems are sold within the geofenced region of the index. This section details a rigorous, multitiered verification strategy, which employs both advanced technological solutions and traditional auditing methods. The approach, designed for transparency, efficiency, and adaptability, makes it possible to continuously monitor and make timely adjustments to meet evolving project requirements. By integrating remote verification with comprehensive field audits, the program diligently verifies participants' compliance and authenticates claims. It thus safeguards the investment in rural and underserved communities and ensures that objectives are achieved effectively.

Systems with coordinates outside the state or LGA captured in the submitted claims sheet will automatically be rejected and will not be eligible for the verification exercise.

Verification will combine two methods: remote verification using customer relationship management software capable of linking application programming interfaces to data management software and verification of a small fraction of the claims (20–25 percent) by the IVA. The IVA will also be required to perform, throughout the Project's life, periodic spot checks of claims for which grants have been received post verification. The IVA will provide the PMU with a verification methodology document for approval prior to its onboarding. The verification steps are as follows:

The IVA will also be responsible for recording, reporting, reverifying, and closing grievances reported by customers at the verification stage. As part of the verification plan, a framework for grievance redress during the course of the program should be included.

The IVA must also demonstrate the technical capacity to perform, while working closely with the technical specialist, system checks to ensure they conform to the technical specifications submitted to the PMU.

In addition to verifying the locations of the claims and customer payments made for Tier 3–5 systems, solar companies will be responsible for providing proof that their customers fall in one of the above categories. As with other aspects of verification, the type of customer being served will be subject to random audits by the IVA.

Remote Verification for Supply-Side Index

Remote verification makes it possible to immediately evaluate data directly from grantees' systems. It thus helps ensure compliance and accuracy in real time. Remote verification not only streamlines the verification process, it also significantly reduces operational costs and speeds up the decision-making timeline. This helps to disburse funds faster and provide a more agile response to project dynamics. The purpose of implementing remote verification for the Supply-Side Subsidy Index is to ensure transparency and efficiency in the distribution of subsidies for Tier 1 and Tier 2 SHSs within the eligible regions. This process utilizes the Odyssey platform in collaboration with VIDA and helps to verify that each SHS sale meets the predetermined eligibility criteria based on geographic, technical, and temporal parameters.

The process of remote verification within the DARES PBG program involves several key steps designed to ensure accuracy, efficiency, and transparency.

Remote Verification Process

Submission of claims. Companies are required to submit comprehensive sales data for each transaction through the Odyssey platform. These data include customer information, serial numbers, GPS coordinates, sales dates, and detailed system specifications (type, tier, and capacity).

Verification of data and index cross-referencing. Odyssey integrates the Supply-Side Index, which categorizes geographic regions by their vulnerability (low, medium, high). Each submitted sale is automatically cross-referenced against this index to verify that the location of an SHS installation falls within an eligible region.

Verification of system details. Verification of system specifications ensures that SHSs belong to the correct tier and capacity categories as stipulated for eligibility.

Real-time data checks. Odyssey performs real-time checks to verify the accuracy of GPS data, the authenticity of serial numbers, and the integrity of customer information. This step is crucial to prevent fraud and ensure that subsidies are awarded correctly.

Subsidy calculation and region classification. Once a sale is verified as eligible, the Odyssey platform calculates the appropriate subsidy amount based on the system's tier and the region's classification within the Supply-Side Index. This ensures that subsidies are scaled according to regional vulnerability and system capacity, facilitating targeted support where it is needed the most.

Final approval and disbursement. Approved claims are queued for payment disbursement. The REA prepares a disbursement report and submits the disbursement package to the World Bank for no objection. Subsidies are paid out to companies after a final verification, which facilitates the continued deployment of SHSs in the targeted regions.

Ongoing monitoring and updates. The Supply-Side Index is regularly updated and system performance is continuously monitored. These are to adapt to changes in regional conditions and refine the subsidy distribution process. This adaptive approach enables responsive adjustments to subsidy strategies based on actual program outcomes and evolving regional needs.

Independent Verification Agency (IVA)

Level 1: Telephone and field sample

From the list of customers provided by the grantees in their claims, the internal auditor will derive sample sizes through sampling and share them with IVAs, to be used for conducting the verification process.

Sample sizes may vary. The initial sample size for verification will be 100 percent for claims totaling 500 units and below, and 50 percent for claims totaling more than 500 units (table 2.4).

Table 2.5 • Samples for Independent Verification

Description	Number of claims	Sample size	Comments
Monthly submission	500 and more	100%	Verification strategy to be provided by the IVA in their operational document
Monthly submission	500 and more	50%	
Spot checks	Vary	20% of all claims that have been verified and for which payments have been made across an 18-month timeframe	Phone and field

Note: IVA = independent verification agency.

The IVA will be required to provide an implementation and operations methodology. This will not only include the verification and reporting procedures but also a PMU-approved methodology to report, track,

and follow up on grievances to ensure they are addressed satisfactorily, as verified by customers. The IVA will be required to show presence and expertise in conducting verification exercises in Nigeria; joint ventures and consortia will be accepted. Expertise in the following fields will also be required:

- Technical
- Social and environmental
- Monitoring and evaluation

The IVA, in collaboration with the PMU, will review and agree on the reporting templates and timelines, as well as the methodology for verification through spot checks.

Level 2: Audit of grantee processes/systems

The full process audit would include these steps:

1. Interview with grantee management, seeking to identify the underlying reasons for the failed Level 2 audit. There may be a simple explanation or error.
2. A more detailed review of the grantee's processes or systems might be warranted, to either verify the assumed cause of an issue, or to identify a cause. This might involve following the paper trail for the failed customers back to the source or a check of the processing steps.

Depending on the cause of an issue, a varied audit plan might be developed or imposed for a grantee. Alternatively, once identified, the issue may be resolved.

Level 3: Full customer audit

A full audit of the claims provided by customers might be imposed if their integrity has been poor. This audit would be done in contemplation of either validating the claims or potentially seeking repayment of past claims.

Grantees are expected to sensitize customers on the audit and verification processes. Customers must be willing and ready to engage with verification agents during the phone interview sessions and the physical site visits. The Project will not be held liable for unverified claims resulting from customers' unwillingness to respond to the agents. This will also be captured in the grants' agreement.

Monitoring and Evaluation

The M&E framework of the DARES PBG program is intricately designed to ensure that project objectives are effectively achieved. This comprehensive framework begins with establishing a clear alignment with the overarching goals of expanding solar energy solutions in underserved and rural areas. Data collection is integral to this process and involves continuous collection of primary data from beneficiaries and grantees, as well as secondary data from existing market studies, reports, and databases. This robust data collection supports the evaluation of project impacts and facilitates the ongoing refinement and adjustment of project strategies to increase effectiveness and reach.

Subsidy Review Subsection

The subsidy review process is a pivotal element of the M&E framework for the DARES PBG program. It ensures that subsidies are allocated effectively and the allocation is responsive to market and economic fluctuations. This process utilizes the Supply-Side Index developed by VIDA and closely monitors the geographic and demographic penetration of SHSs. This enables a precise assessment of where subsidies are fostering solar adoption and where additional efforts may be required. This index aids in identifying regions that will benefit from further focus or strategy adjustments. Additionally, periodic reviews every 18 months is integral to the process, evaluating the alignment of subsidies with their intended objectives and determining necessary adjustments. These reviews incorporate multiple factors, including market penetration metrics, economic indicators such as inflation and exchange rates, and stakeholders' feedback, and ensure that subsidy allocations remain relevant and effective in promoting sustainable SHS adoption across the targeted communities. This review will look at three aspects:

1. Market penetration metrics for SHSs. Market penetration for SHSs is defined as the ratio of SHS-equipped households and the total potential market within the targeted regions. To effectively monitor the success and scope of SHS adoption, regular data collection will be conducted. These data will enable the program to track progress toward specific penetration thresholds. Once these thresholds are reached, it may indicate a reduced need for subsidies as the market becomes increasingly self-sustaining. Adjustments to subsidy levels will be considered based on these metrics to ensure that support is optimized and targeted where needed the most.

2. Monitoring inflation and exchange rates. Economic stability is crucial for the ongoing success of subsidy programs. The Project will therefore regularly monitor key economic indicators, including inflation rates and the exchange rate of the naira to the dollar. These factors are significant as they affect the purchasing power and cost structures for SHS deployment. Should these indicators fluctuate significantly, the subsidy amounts will be adjusted to maintain their real values and to ensure they remain effective. This adjustment ensures that the financial support provided continues to meet its intended objectives despite economic variances.

3. Stakeholder feedback. Stakeholder engagement is essential for refining the subsidy program. As part of stakeholder engagement, regular feedback will be solicited from key groups including SHS companies, end customers, and local community representatives. This feedback will provide valuable insights into the effectiveness of the subsidies and their impacts on the communities they are meant to serve. Integrating stakeholders' feedback into the program's review process can aid the Project in making informed adjustments for the subsidies to be delivered and impact the targeted communities better, aligning with their needs and experiences.

Demand-Side Subsidies (to be launched at a later date)

According to affordability studies, most Nigerians in rural areas cannot afford a Tier 1 SHS. This highlights a critical need for financial support to enable these lower-income households to access clean energy solutions. To effectively target these households, DARES will leverage the National Social Registry (NSR), which currently encompasses approximately 12 million households and counting. The purpose of the program is to provide market-driven subsidies that will make Tier 1 SHSs financially accessible to those listed on the NSR, serving as a vital tool in bridging the affordability gap.

The initiative will begin with a pilot program in selected states identified through the World Bank's poverty map and REA's preference. This pilot will not only facilitate the distribution of subsidies but also measure the social and economic impacts of providing financial assistance, including changes in energy access, economic well-being, and gender dynamics, within the participating communities. This section of the Project Implementation Manual will outline key components, including subsidy calculation, eligibility criteria, implementation process, verification methodology, and M&E strategies. This program's launch date will be announced later.

Introduction to the National Social Registry

The NSR is a crucial tool for identifying and categorizing low-income households in Nigeria. It thus provides a foundational element for targeting demand-side subsidies. The NSR contains a wealth of data, including a proxy welfare score, which helps assess households based on their assets rather than exact income levels. This scoring system enables classifying households into 10 categories, or deciles, with Decile 10 representing the wealthier households and Decile 1 the most economically disadvantaged households on the registry.

Importantly, the NSR has facilitated government-initiated cash transfer programs, whose purpose is to provide financial assistance to vulnerable households. This existing framework not only underscores the credibility of the registry but also establishes a distribution network that private sector companies can leverage to access eligible households in these communities. Utilizing the NSR can aid the demand-side subsidy program to effectively target those in the greatest need, thus ensuring that support is directed to the households that will benefit the most from access to clean energy solutions.

Subsidy Calculation

The methodology to calculate the demand-side subsidy is designed to determine the level of financial support that eligible households will receive for acquiring Tier 1 SHSs. The subsidy level is the result from subtracting a household's ability to pay from the average price of a Tier 1 SHS. The ability to pay is assessed with the assumption that households can allocate 10 percent of their consumption expenditures toward purchasing an SHS—the assumption reflecting the higher quality and benefits of solar solutions relative to alternative energy sources, as determined by the Nigerian Living Standards Survey. Consequently, the subsidy amount represents the reduction in system price that will be covered by the DARES subsidy. The program specifically targets Deciles 1–7 as the need for subsidies is greatest among these households, due to their low consumption expenditures. Targeting subsidies in this manner ensures that support is directed effectively toward the economically disadvantaged segments of the population.

Company Evaluation

The companies participating in the demand-side subsidy program will be evaluated in adherence to the eligibility criteria established under the supply-side subsidies. In addition to meeting these criteria, companies must explicitly indicate their interest in participating in the demand-side subsidy program. This evaluation process will ensure that the selected companies not only comply with the required standards but also demonstrate a commitment to supporting the program's objectives of improving access to clean energy solutions for low-income households.

II.C • Subcomponent 2.2: Performance-based Grants for Solar Business Systems—$150 million (to be launched at a later date)

The purpose of this initiative is to accelerate the adoption of high-capacity SAS systems tailored to meet the significant energy needs of economic entities such as economic clusters, public facilities, and agro-processing zones. This component, which focuses on individual users, will promote the adoption of the energy-as-a-service model and long-term leasing options to address affordability issues. Scheduled for future implementation, the program is designed to boost productivity and economic activities by helping to overcome the initial costs associated with higher-capacity solar installations.

Eligibility Criteria

Eligibility for participation in the PBG program for economic users is determined through a set of carefully designed criteria, which ensure the beneficiaries as well as the energy companies delivering solutions are capable of achieving the program's objectives. These criteria are intended to identify entities that can not only benefit from high-capacity solar installations but also effectively contribute to their sustainable use and maintenance.

Eligibility of beneficiaries. This section will define the criteria for identifying and selecting economic clusters, public facilities, and agro-processing zones that stand to benefit the most from improved energy access. It will specifically support the deployment of SAS solutions in scenarios where mini grid options are not viable.

Eligibility of service providers. This section will specify the requirements for solar solution companies to be involved in the program. A quality assurance framework for component-based systems will be established with the support of Verasol. The framework will help ensure that installations are reliable, effective, and suitable for the beneficiaries' operational demands.

Subsidy Calculation

A framework for determining the amount of subsidy provided will be determined. The framework will compute the provided subsidy amount by considering factors such as system capacity, projected usage, and expected impact. This section will detail how subsidies are calculated to ensure they are both sufficient to motivate providers and cost-effective for the program.

Verification Methodology

Details on installations and service delivery will be verified to ensure compliance with program standards and objectives. This section should outline both initial and periodic verification processes to ensure systems continue to demonstrate integrity and performance.

Ongoing Monitoring and Evaluation

Ongoing monitoring and evaluation will include strategies for continuously assessing the effectiveness of the installed systems and the overall impact of the subcomponents on the targeted beneficiaries. This includes:

- Monitoring the operational status and energy output of the installed systems;
- Evaluating the economic and social benefits realized from the increased energy access; and
- Adjusting program parameters in response to observed results and changing needs.

II.D • Subcomponent 2.3: Performance-based Grants for PUE Technologies—$50 million (to be launched at a later date)

The DARES project in Nigeria seeks to facilitate the widespread adoption of SAS productive use of energy (PUE) technologies and boost the distribution of SHSs in rural communities. While the solar-powered PUE market is still emerging in Nigeria, there exists a diverse range of technologies that can significantly benefit from solar solutions. This initiative adopts a strategic and phased approach aimed at prioritizing well-established technologies, including solar mills, solar water pumps for agricultural and aquacultural applications, and solar cooling units catering to MSMEs and agribusinesses, and the development of charging stations for electric mobility.

Implementation Strategy

The program will have a dual funding approach:

Mature technologies. A significant portion of funds is reserved for mature technologies such as solar water pumps, solar cooling systems, and solar-powered electric mobility solutions. These technologies are promoted through a reverse auction mechanism, which ensures competitive pricing and efficient use of subsidies. This method is tailored to technologies that are ready for immediate deployment and can guarantee quick returns in terms of productivity gains and economic impact.

Emerging technologies. A dedicated fund supports piloting and evaluation for emerging technologies that demonstrate promise but have not yet achieved widespread market penetration. This fund aims to foster innovation and allow for adaptive testing and scaling of new solutions that can potentially transform energy usage in target sectors.

Eligibility Criteria

Technology eligibility. Eligibility for funding differs**]** based on technology maturity. Mature technologies must meet established quality standards and have a clear record of productivity enhancement in similar settings. Emerging technologies, meanwhile, are selected based on innovative potential and preliminary evidence of effectiveness.

Supplier eligibility. Suppliers of both mature and emerging technologies must comply with rigorous standards for system performance and durability. They must also demonstrate capacity for large-scale deployment and support for technologies post installation.

Funding Allocation and Subsidy Structure

This component employs a tailored approach to financial incentives, which is designed to optimize the impact and efficiency of investments across different categories of technologies. By differentiating

between mature and emerging technologies, the program ensures that each category receives the appropriate level of support and subsidy to drive rapid adoption and meaningful impact:

Mature technologies. The funding strategy for mature technologies is designed to leverage the technologies' proven market readiness and impact potential. Utilizing a reverse auction mechanism, the program not only promotes cost efficiency, but also guarantees that these well-established technologies can be deployed swiftly and at scale, maximizing their benefit.

Emerging technologies. A dedicated fund is allocated specifically for the development and testing of emerging technologies. The fund, which was allocated recognizing the need for innovation and the potential of new technological solutions, is structured to support higher-risk projects that require additional research and validation. Innovative solutions are thus provided with a crucial platform to demonstrate their value and effectiveness in the field.

CHAPTER III • Component 3: Technical Assistance

This component is designed for the development of a framework for upscaling rural electrification, and support project implementation as well as broad capacity building in the Rural Electrification Agency (REA), Nigerian Electricity Regulatory Commission, Federal Ministry of Power (FMoP), Lagos State Electricity Board, and other relevant stakeholders. It will support various activities, including but not limited to the ones described below.

III.A • Subcomponent 3.1: Institutional Strengthening—$10 million International Development Association (IDA) equivalent

This subcomponent will support activities to build institutional capacity, including (i) strengthening of the implementation capacities of the REA and FMoP, and (ii) the development of critical studies, including the national electrification plan.

1. Strengthening of the implementation capacities of the REA

The subcomponent will support the Project Management Unit's (PMU's) overarching goals across the following essential pillars:

a. **Consultancy services for the development of project pipelines for the implementation of the Distributed Access through Renewable Energy Scale-up (DARES) project:**
   i. Map out existing renewable energy supply chains and track the growth of the localized value chain;
   ii. Assist in mobilizing financing from pension funds and other committed partners;
   iii. Collaborate with philanthropies and financial institutions that have current energy access initiatives, to mobilize additional financing;
   iv. Create an investment platform structure that can mobilize funding from development partners and donor agencies to unlock local currency institutional funding;
   v. Provide technical assistance (TA) in achieving Nigeria's Energy Compact.

b. **Specialized consultancy services for strategic media relations and advocacy, including multimedia production and program management.**

c. **Consultancy services for human resource assessment and optimization of the NEP for operational efficiency toward the implementation of DARES.**

d. **Consultancy services for the engagement of a project monitoring and evaluation firm for DARES.**

e. **Specialized consultancy services for the development of a holistic data architecture, unified geospatial solutions, the integration of advanced management systems, including strategic data optimization, and the deployment of enterprise resource management solutions for DARES.**

External consultancies will be sought to complement the components so that they are more efficient and effective.

This support will fund the DARES-PMU; the PMU's technical, management, financial, and administrative staff in Abuja and staff in the six regional offices; and the Grants Administrator. Key stakeholders, including

the FMoP, mini grid developers, and solar companies, will receive support for institutional strengthening related to energy access. Support will also be provided for the development of critical studies as well as the national electrification plan.

In addition, TA will help build the capacity of local banks to lend to mini grid and stand-alone solar (SAS) projects. The TA will be provided in coordination with the International Finance Corporation and World Bank finance experts. This activity will improve the local financial institutions' understanding of the costs of, revenues from, and risks associated with mini grids and allow them to better appraise loan applications from mini grid project Developers. The Central Bank of Nigeria has made low-cost funds available to participating financial institutions to on-lend at a maximum interest rate of 9 percent. Mini grid developers are eligible for these loans, although their uptake has been negligible due to limited interest from and appetite of the financial institutions. Grant funding from this Project will ideally need to be complemented by commercial debt financing, and there is, therefore, an urgent need to raise awareness of mini grid projects among local financial institutions and develop their capacity to appraise such projects.

Eligible activities may include training by mini grid experts and financial analysts who are familiar with the economics of mini grids, as well as study visits to countries where a significant number of mini grids have been deployed, with an aim to consult the financial institutions that have lent to these projects and learn from their experience.

This component will also build the capacity of existing mini grid developers and other private companies interested in entering the mini grid market to identify sites viable for mini grid development, mobilize community engagement, establish business relationships with reputable vendors, develop bankable business plans with realistic load models and revenue forecasts, and ensure the implementation of environmental and social safeguards.

III.B • Subcomponent 3.2: Building and Implementing the DARES Ecosystem—$20 million IDA equivalent

This subcomponent will focus on (i) the preparation of a pipeline for isolated and interconnected mini grids; (ii) the development of an ecosystem for the productive use of energy, including geospatial mapping, grant administration, independent verification, demand stimulation and capacity building related to market-based products and pricing for financial institutions, and financial literacy; (iii) environmental and social risk management, including the implementation of citizen engagement interventions; and (iv) regional- and continental-level strengthening of implementation capacity, and expertise sharing.

This subcomponent will be a vehicle for the development of a pipeline of investments (including, but also beyond, those identified during Project preparation) in mini grids and SAS systems. The subcomponent will finance the development of an electrification strategy and a least-cost geospatial electricity mini grid, as well as the development of an interconnected and off-grid rollout plan in a participatory manner, bringing together the FMoP, distribution companies, development agencies, the private sector (including developers and financiers), and communities. The activities under this subcomponent will include, but not be limited to, energy demand studies, surveys, engagement of distribution companies, and the identification of communities for the development of solar mini grids and individual solar systems. Also

included will be capacity building; knowledge sharing; and the definition of opportunities for exchanging information on electrification, results-based financing, and donor-funded projects locally and internationally.

The development of an electrification strategy for Nigeria could also be another activity to be considered.

This activity will support nationwide geospatial analysis and survey data collection; these will help identify sites feasible for deploying mini grids and help developers determine financial viability. Specifically, this activity will finance the determination of electrification status using satellite imagery and customized algorithms, manual building mapping for residential and nonresidential structures in unelectrified communities, and surveys to collect socioeconomic data and record consumption behavior in order to build customized load profiles and develop preliminary financial analyses. These outputs may be used to provide market intelligence to prospective developers that are prospecting for candidate mini grid sites, or they may serve as the basis for additional mini grid tenders to be issued by the REA.

III.C • Subcomponent 3.3: Engagement with States—$10 million IDA equivalent

Under this subcomponent, (i) viability for solar rooftop will be determined and a one-stop-shop model for market creation will be set up for interested and qualified states. All eligible states can avail this TA. States will have to demonstrate readiness to join the project. Assessment will be made using the following criteria: (a) provision of a written commitment on the establishment of a policy target for solar rooftop photovoltaic as an outcome of the TA support; (b) existence of densely populated urban areas that can be targeted for solar rooftop; and (c) any experience in solar rooftop.

Annex A contains a table detailing TA activities structured with the performance-based conditions.

CHAPTER IV • Supporting Units

IV.A • Procurement

Procedures for procurement pursuant to the utilization of International Development Association credit are found in the relevant guidelines of the World Bank. In the case of inconsistency with the contents of this manual, such procedures as outlined in the relevant World Bank procurement regulations shall take precedence over the contents of this manual.

Introduction of the PPSD and Procurement Plan for the First 18 Months

The Project Procurement Strategy for Development (PPSD) for the Distributed Access through Renewables Energy Scale-Up (DARES) Project has been prepared. It provides the basis and justification for the procurement decisions, including the approach to market and selection methods. It addresses how the procurement activities will support the Project Development Objectives and deliver best value for money under a risk-based approach.

The procurement plan for the first 18 months, which was derived from the PPSD, has also been prepared.

Definition of the Applicable Procurement Regulation under the Program

This Project shall use the World Bank's "Procurement Regulations for IPF Borrowers" (Procurement Regulations for Goods, Works, Non-Consulting and Consulting Services), Fifth Edition, dated September 2023. The use of Nigeria's Procurement Act 2007 may be considered for the procurement of standard off-the-shelf goods and small works as the situation demands.

Procurement Plan

The procurement plan contains a list of contract packages for goods, works, and non-consulting services and consulting assignments to be executed within the five years of the Project. It will be updated on a regular basis to reflect the latest developments. The latest version of the procurement plan can be viewed in the document library for the Nigeria DARES Project on the World Bank website at: http://projects.worldbank.org/P161885/?lang=en&tab=documents&subTab=projectDocumens

The procurement plan excludes mini grid and stand-alone solar system components that follow an output-based approach.

Procurement Thresholds

All direct contracting and contracts estimated to cost above $1,000,000 (goods) or $10,000,000 (works/supply and installation) per contract will be subject to prior review by the Bank (table 4.1).

Table 4.1 • Procurement Methods and Prior Review Thresholds for Procurement of Goods, Works, and Nonconsulting Services

	Category	Procurement method	Method threshold ($)	Prior review threshold ($)
1.	Goods and nonconsulting services	ICB	Above 5,000,000	All
2.	Goods, information technology, and nonconsulting services	NCB	Below 5,000,000	1,000,000 and above
3.	Goods, information technology, and nonconsulting services	RFQ	Up to 100,000	None
4.	Works; including turnkey, supply and installation of plant, and PPP	ICB	Above 20,000,000	All
5.	Works; including turnkey, supply and installation of plant, and PPP	NCB	Below 20,000,000	10,000,000 and above
6.	Works; including turnkey, supply and installation of plant, and PPP	RFQ	Up to 200,000	None
7.	Motor vehicles. Quotation from first-line distributors	RFQ	Up to 500,000	None

Note: ICB = international competitive bidding; NCB = national competitive bidding; PPP = Public Private Partnership; RFQ = request for quotation.

Consultancy services estimated to cost above $200,000 per contract and single-source selection of consultants for all values will be subject to prior review by the Bank.

A shortlist of consultants for services estimated to cost less than $300,000 or equivalent per contract and $500,000 for engineering design and supervision may consist entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Table 4.2 • Selection Methods and Prior Review Thresholds for Selection of Consultants

	Category	Selection methods	Prior review threshold ($)
1.	Firms	Competitive methods	500,000
2.	Firms	Direct selection	All
3.	Individual	Individual	200,000

The engagement of consultants to support the implementation of DARES shall be for an initial period of two years minimum. This is to ensure stability of operations and enhance implementation of programs.

Standard Bidding Documents

All procurement activities under the Project will be carried out in accordance with the Procurement Plan and with the World Bank's "Procurement Regulations for IPF Borrowers" (Procurement Regulations for Goods, Works, Non-Consulting and Consulting Services), Fifth Edition, dated September 2023.

The versions of the standard bidding documents, request for proposals, and bid evaluation forms to be used are given in table 4.3.

Table 4.3 • List of Form Versions to Use

Goods	Request for Bids – Goods (1 envelope process), July 2023	Link
	Request for Bids – Goods – Framework Agreement (1 envelope process), July 2023	Link
	Request for Bids – Goods (2 envelope process), July 2023	Link
	Request for Bids – Goods – Framework Agreement (2 envelope process), July 2023	Link
Works	Prequalification Document, July 2023	Link
	Request for Bids (Two-envelope with rated criteria), July 2023	Link
Design and Build	Initial Selection	Link
	Request for Proposal (Single Stage)	Link
	Request for Proposal (Two Stage)	Link
Engineering, Procurement, and Construction/ Turnkey	Initial Selection	Link
	Request for Proposal (Single Stage)	Link
	Request for Proposal (Two Stage)	Link
Consulting	Request for Proposal Consulting Services (Supervision)	Link
	Request for Proposals – Consulting Services (Nonsupervision)	Link
	Requests for Proposal Framework Agreement – Consulting Services (financial proposals invited at Primary Procurement Stage)	Link

	Requests for Proposal Framework Agreement – Consulting Services (financial proposals invited at Secondary Procurement Stage)	Link
Nonconsulting	Request for Bids	Link
	Request for Bids – Framework Agreement	Link

The above standard bidding documents for goods and works shall be used for the International Competitive Bidding method of procurement. Under the National Competitive Bidding method of procurement, the standard bidding documents shall be adapted to suit procurement conditions of the Federal Government of Nigeria**.**

Operating Costs

Operating costs financed by the Project will be procured using the procedures in table 4.4.

Table 4.4 **• Procedure for Financing Operating Costs**

Description	Procedure	Post/prior review
Staff travel expenditures and other travel-related allowances	Staff travel shall be based on data sharing agreement rates for local and foreign travel as published by the World Bank from time to time	Prior
Vehicle operation, maintenance, and repair	Retainer ship contract with certified motor repair workshop	Post
Office rental	Tenancy agreement with suitable property owner	Post
Office maintenance, materials, and supplies	Shopping in accordance with Federal Government of Nigeria National Procurement Manual for major items. Minor off-the-shelf items by comparison of at least three invoices	Post
Utilities, communication expenses, and bank charges	Bills, invoices, and receipts presented by approved vendors	Post

Contract Management

Procurement and contract management training for Project Management Unit (PMU) staff that have not attended similar training would be organized within one year of project effectiveness. Each contract shall be allocated a competent project manager from within the PMU or engage a consultant who shall be responsible for administering the contracts. Project managers shall ensure that all bank guarantees, and insurances submitted by contractors and suppliers remain valid in accordance with the terms of the contract.

The PMU shall be closely supervised and governed to avoid cost and time overruns. Collaboration with all stakeholders, especially host communities where the individual contracts will be executed, is necessary for successful implementation of the Project.

Payment to contractors and consultants shall be made promptly as per terms and conditions outlined in each contract. To avoid delay in payment, contractors and suppliers shall first notify the employer or purchaser with details of works completed or goods supplied. Upon verification, the employer or purchaser issues a work valuation/payment certificate for works and installation services or an acceptance certificate for goods delivered. Contractors and suppliers shall then attach copies of the relevant certificates to their invoices and submit for payment.

Procurement by Grantees (for Components 1 and 2)

Contracts for works, goods, and consultancy services to be procured by private entities, must be done through *established commercial practices* acceptable to the World Bank. The Rural Electrification Agency (REA)/PMU will assess the procurement capacity of project developers as part of the grant application or proposal evaluation.

IV.B • Financial Management and Audit

(**In line with the 2024 OAGF Project Financial Manual for Donor-Funded Projects in Nigeria)**

The responsibility for establishing and maintaining acceptable financial management (FM) arrangements for the project will be handled by the Federal Project Financial Management Department (FPFMD) at the Office of the Accountant General of the Federation (OAGF). The Federal Treasury Circular of March 2010 established the FPFMD in the OAGF to handle the FM responsibilities for funds provided to ministries, departments, and agencies by donor partners. The FPFMD is a multi-donor and multi-project FM platform, established at the federal level through the joint efforts of the World Bank and the Federal Government of Nigeria (FGN). The FM issues according to the six FM elements include budgeting, funds flow, accounting, internal control, financial reporting, and audit.

Planning and Budgeting, Disbursement Procedures, and Financial Management

Planning and Budgeting

On an annual basis, the Project Accountant from the FPFMD, residing within DARES, will prepare the budget for the fiscal year based on the work program in consultation with key members of the PMU. The budget will be submitted to the World Bank at least two months before the beginning of the Project fiscal year. Detailed procedures for planning and budgeting will be documented in the Financial Procedures Manual.

Financial Reporting Arrangements

The DARES-PMU will prepare quarterly unaudited interim financial reports (IFRs) in form and content satisfactory to the Bank and submit them to the Bank within 45 days after the end of the quarter to which they relate. The format of the IFR has been agreed between the World Bank and DARES. The contents of

the IFR will include a section to report on the accountability of funds utilized and a section to access funds using the report-based method of disbursement.

World Bank funds will be accounted for by the Project on a cash basis. A computerized accounting system will be used. Annual financial statements will be prepared in accordance with the relevant International Public Sector Accounting Standards. All accounting and control procedures will be documented in the Financial Procedures Manual, a living document which will be subject to review as appropriate.

Accounting Arrangements

The FPFMD, which oversees the FM of the project, will designate from the pool of professional accountants in the OAGF a Project accountant, Project internal auditor, and other supporting accounting technicians that will make for appropriate segregation of duties. The FPFMD will render annual audited financial statements and periodic unaudited IFRs in the format and frequency, which will be agreed, submitting them to the World Bank within agreed timelines. The Remita will be used for naira payments; while the accounting software shall be configured in line with the formats of the IFR and the annual financial statements. The project bank account at the federal level will be opened with the Central Bank of Nigeria (CBN).

The FM unit's responsibilities include:

1. Confirm that projects meet all eligibility criteria established in this Implementation Manual, including compliance with the FGN and World Bank's fiduciary and safeguards requirements.
2. Manage designated accounts with the CBN for DARES.
3. Request of replenishment of account according to World Bank guidelines.
4. Prepare quarterly reports to be furnished to the World Bank 45 days after the end of the period covered by such reports.
5. Prepare completion report to be furnished to the World Bank three months after the closing date of the project.
6. Financial reporting to the OAGF-FMoF (Federal Ministry of Finance) and the World Bank.
7. Ensure annual audited financial reports for the Project are prepared and furnished to the World Bank within six months after each fiscal year.
8. Form part of the Financial Evaluation Committee for Project activities.
9. Management of Imprest for the day-to-day running of the PMU.

Funds Flow Arrangements

Project funding will consist mainly of International Development Association credit. Funds flow arrangements for the project will be as follows (figure 4.1):

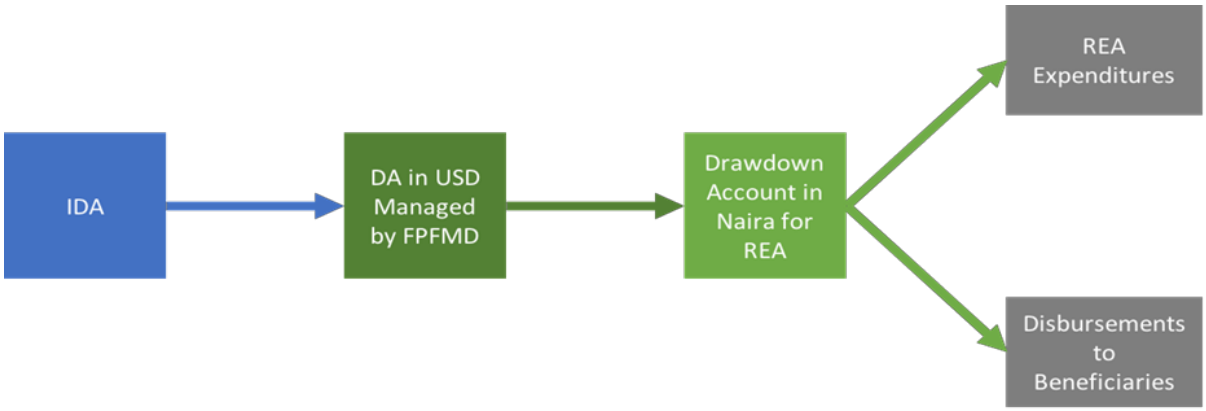
- The World Bank will make an initial advance disbursement from the proceeds of the credit by depositing into the recipients-operated Designated Accounts (DAs), opened and managed in the CBN by the FPFMD and denominated in US dollars.
- Actual expenditure will be reimbursed through submission of withdrawal applications and documented statements of expenses.

- Transfers from the DAs (for payment of transactions in local currency) will be deposited in the Project Account in the CBN, opened in accordance with FGN's Single Treasury Account policy, to meet eligible expenditures in local currency project transactions denominated in naira, provided that transactions and balances in these accounts are included in all Project financial reports.

DA funds will be accounted for by the Project on a cash basis. A computerized accounting system will be used. Annual financial statements will be prepared in accordance with the relevant International Public Sector Accounting Standards. All accounting and control procedures will be documented in the Financial Procedures Manual, a living document which will be subject to review as appropriate.

The PMU will draw funds from the Project Account and then disburse them directly to mini grid developers (Component 1) and will be responsible for ensuring that any preconditions for making a grant/subsidy payment are met by each developer. The PMU will disburse directly to grantees under Components (1 and 2) after the receipt of cleared invoices from the Grant Administrator/Independent Verification Agent. The PMU will also draw from this account to fund the project support and technical assistance (TA) activities under Component 3.

Figure 4.1 • Project Flow of Funds Diagram



Note: DA = Designated Account; FPFMD = Federal Project Financial Management Department; IDA = International Development Association; REA = Rural Electrification Agency; USD = US dollars.

Approval Threshold

To streamline the workload of the managing director/chief executive officer of REA, it is recommended that DARES establish an approval threshold for the Head of the PMU (HPMU). The approval threshold for the HPMU will be set at $5,000 per transaction, for all administrative tasks as well as payment of consultant/staff remuneration. Expenses exceeding this threshold will be subject to approval from the managing director and no objection from the World Bank where necessary.

External Audit Arrangements

Annual audits would be conducted at the end of each fiscal year by independent and qualified auditors, acceptable to the FPFMD and World Bank. The auditors would be selected on a competitive basis in accordance with the World Bank's procurement guidelines. The terms of reference of the auditors would be cleared by the World Bank. The project would select the auditor within four months of the start of project implementation. The project financial statements including movements in the DA would be audited in accordance with International Standards on Auditing and a single opinion would be issued to cover the project financial statements in accordance with the World Bank's audit policy. The auditors' report and opinion in respect to the financial statements, including the management letter, would be furnished to the World Bank within six months after the end of each fiscal year.

IV.C • The Administrative Unit

The administrative unit supported by a human resource (HR) consultancy will provide support and maintain a functional and effective registry for the DARES-PMU through the following tasks:

- Receive, register, and update all incoming and outgoing mails. All mails to the Project will be properly addressed to the HPMU and must pass through the Administrative Unit for proper documentation and ease of tracking.
- Ensure a good and conducive working environment for team members. Ensure the office furniture is well cleaned, and the lighting systems and other gadgets are in good working condition.
- Maintain and update records. A designated storage area is required to store all project files for safety. Ensuring all approvals are uploaded on the drive for ease of reference, the Administration Unit operates an open and secret registry to preserve all documents pertaining to the Projects.
- Coordinate general maintenance of the office and office equipment, furniture, plumbing, and electrical works.
- Oversee management of the project vehicles.
- Ensure bills and payments are promptly dispatched.
- Reception. Support administrative work on the project by receiving and directing visitors to appropriate offices/officers.
- Perform other duties as assigned by the HPMU.
- Manage the use of conference rooms and meeting rooms.

The engagement of consultants to support the implementation of DARES shall be for an initial period of two years minimum. This is to ensure stability of operations and enhance implementation of programs.

IV.D • Monitoring and Evaluation

Project Monitoring and Evaluation

The World Bank Monitoring and Evaluation (M&E) guidelines will enable the PMU of the DARES Project to carry out the monitoring of all program activities as well as evaluate its impact going forward to ensure that assigned objectives are met. The function of the M&E system is aimed at:

- Collecting input-, output-, and outcome-level data across all components toward measuring the overall Project Development Objectives actualization.
- Measuring the gaps between planned and implemented activities and budget.
- Validate Project-related assumptions, key results, and cross-cutting achievements.
- Tracking value for money on Project implementation.
- Proposing corrective measures if deviations occur.
- Sharing information among the program's stakeholders.

There will be the procurement of an external M&E consultancy to oversee this responsibility.

Data Management Summary

Data Collection and Collation

Connection data, photovoltaic capacity installed or deployed, funds disbursed, locations of mini grids, capital expenditure, and other data from the Project implementation will be gathered through the Odyssey platform. Socioeconomic data will be collected using surveys, assessments, and research with google sheets or data applications.

Geospatial data will be collated using the Village Data (VIDA) software application to identify potential mini grid sites (least cost), productive uses (marketplaces), and prioritization of public facilities for electrification.

Input-Level Data Collection

This level of data gathering will be collected through the biweekly reporting and meetings. Other primary data collection will be done by the zonal officers at the REA zonal offices, while the M&E team at the PMU will validate, process such data, produce associated reports at identified intervals, disseminate the reports, and finally archive them.

Process-Level Data Collection

The process-level data collection will be for planning purposes and drawn directly from annual work plans /targets or benchmarks to be achieved during a particular year or period of time. The PMU M&E team and the Project accountant will prepare annual work plans and budget. An M&E dashboard, which will be produced by the PMU M&E team, will be a two-page document that will be produced monthly, and will be made up of key indicators/milestones, achievements within the month, constraints, and possible solutions.

Output-Level Data Collection

This will include the implementation data and information derived from monitoring reports and periodic impact evaluation studies. The above data will enable the M&E system to track the project indicators as captured in the Environmental and Social Management Framework and the Project Implementation Manual.

Outcome- and Impact-Level Data Collection

M&E reports shall assess progress made during the quarter and shall provide a summary of the monthly reports leveraging the Odyssey platform. An M&E annual report shall be produced and disseminated at the end of each year and discussed in a meeting with all stakeholders before the end of the first quarter of the succeeding year. An external consultant with active participation in the PMU and the M&E team will conduct the final evaluation of the program.

The DARES M&E Unit will periodically develop desk review analysis of program results and report to the REA management and World Bank. The Unit will also facilitate the approvals of research and studies to measure the DARES impact comprising cost-effectiveness of Project design, test acceptability of intervention, value for money, equity and inclusion, socioeconomic impact, beneficiaries' feedback, and so on.

DARES Data Validation Strategy

The PMU M&E unit reviews the verification report from the Independent Verification Agency and conducts quality control of the report and provides feedback to the PMU.

The PMU M&E unit conducts quarterly spot check to mini grid sites, stand-alone solar sites, rooftop solar sites in Lagos general hospitals, productive use of energy, interconnected mini grids and supported states —under TA with a structured checklist to validate DARES performance results. **Table 4.5 below shows the KPIs, definitions, measurement parameters and targets to access DARES performance result.**

Support and build on the demonstration of accountability through the use of a tracker for percentage disbursement recording for performance-based grants, Minimum Subsidy Tender, output-based fund, productive use of energy, catalytic grant (percentage upon verification by Customer Relationship Management , last-mile incentives, post installation, gender inclusion, poverty index of locations, verification, and commissioning.

Support the component teams to track Project intervention locations using maps as well as status of Projects.

Table 4.5 • DARES PDO Indicator Matrix

SN	Key performance indicator	Definition	Measurement parameter	Midterm target	Endline target

1	People provided with new and improved electricity services	The indicator measures the increase of people provided with new or improved electricity service. It is derived from the number of households with access multiplied by the household size in Nigeria (five people).	Number	TBD	17,524,348
2	Household provided with new electricity services	The indicator measures the increase of households with new electricity services (i.e., new connections).	Number	TBD	3,244,900
3	Household provided with improved electricity services	The indicator measures the increase of households with improved electricity services (i.e., improved quality of service).	Number	TBD	259,970
4	Private capital mobilized	The indicator measures capital expenditure invested by off-grid companies across the various components.	$, millions	TBD	1,010
5	New generation capacity of renewable energy installed	Total photovoltaic capacity installed or deployed through the stand-alone solar systems, mini grids, mesh grids, or productive use of energy components.	Megawatts	TBD	465
6	Net greenhouse gas emissions avoided	The indicator measures net emissions over the economic lifetime (tons of carbon dioxide equivalent, tCO_2e).	Metric tons (tCO_2e)	TBD	16,242,863
7	Productive uses of energy deployed through DARES.	The indicator measures appliances within the categories of agro-processing, cooling, irrigation, and others deployed through DARES.	Number	TBD	TBD
8	Rooftop solar completed and commissioned	This indicator measures the commissioned rooftop mini grid providing access to electricity.	Number	TBD	TDB
9	Direct jobs created through DARES	Employments that occurred as a result of DARES through the off-grid.	Number	TBD	TBD
10	Results-based financing channeled to private sector off-grid companies	The indicator measures the amount of grant disbursed to private sector partners through the DARES Project.	$, millions	TBD	TBD

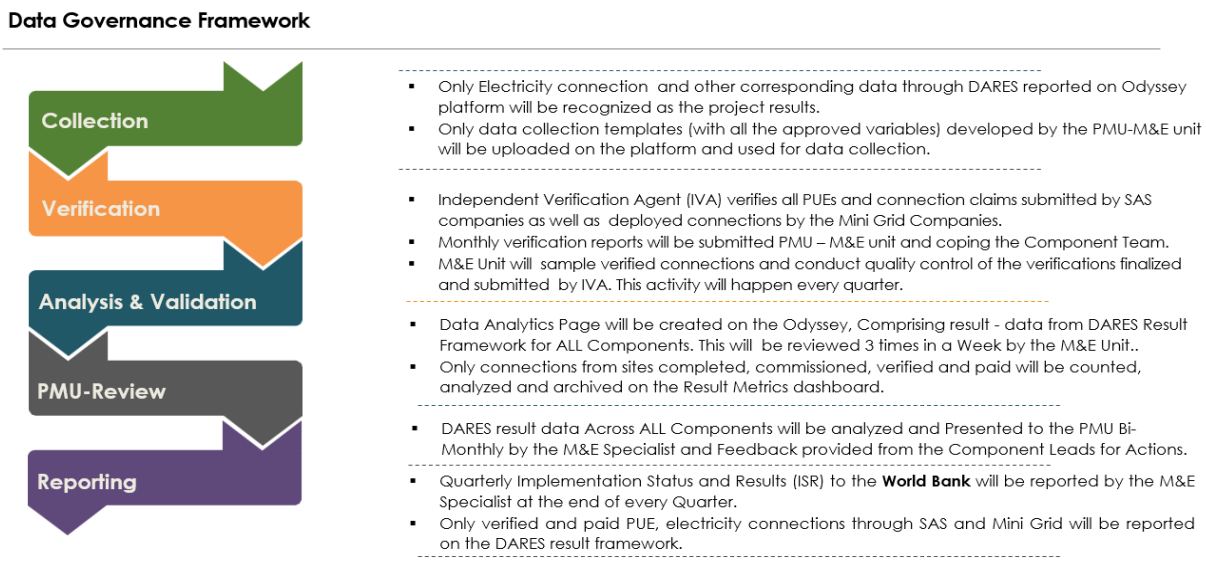
11	Trainings conducted through the technical assistance	The indicator measures trainings conducted, institutional strengthening, ecosystem building, and state-level training.	Number	TBD	TBD

Note: DARES = Distributed Access to Renewable Energy Scale-Up; TBD = to be determined.

Project Data Governance Framework

This is the foundation of effective data management to manage accurate, reliable, and consistent data. This will allow REA-DARES to have a clear control process over their data—establishing procedures for collection, validation, analysis, and dissemination (figure 4.2).

Figure 4.2 • Data Governance Framework



Note: DARES = Distributed Access to Renewable Energy Scale-Up; M&E = monitoring and evaluation; PMU = Project Management Unit; PUE = productive use of energy; SAS = stand-alone solar.

PMU Reporting Responsibility

The PMU will be responsible for reporting on the various components and units' deliverables in line with the Project's Work Plan (table 4.6).

Table 4.6 • Project Work Plan

Reports	Description	Responsible persons	Accountability	Critical deadline

Biweekly	Report will include current achievements, ongoing activities, and next steps.	Subcomponents' managers and unit heads	Component lead	Close of business—Monday (other day) before the meeting day.
Quarterly Implementation Status and Results (ISR)	Summary results during the period under review, efforts toward the Project Development Objective, challenges, financial summary, and next quarter plans.	Subcomponents' managers and unit heads	Component lead	First week of the preceding month—April, July, October, and January.
Annual	Descriptive and analytical report on annual results against the Project targets and component impacts.	Component lead Unit lead	Head of Project Management Unit	Second week of December

IV.E • Environmental and Social

Implementation of Environmental and Social Management

The Project will be implemented in accordance with the World Bank's Environmental and Social Framework and the applicable Environmental and Social Standards (ESS). Nine of the ten ESS are applicable to the project. ESS applicable to the DARES project include ESS1 (Assessment and Management of Environmental and Social Risks and Impacts), ESS2 (Labour and Working Conditions), ESS3 (Resource Efficiency and Pollution Prevention and Management), ESS4 (Community Health and Safety), ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement), ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources), ESS8 (Cultural Heritage), ESS9 (Financial Intermediaries), and ESS10 (Stakeholder Engagement and Information Disclosure).

At this stage, the environmental and social (E&S) risk on this Project is rated **Moderate**. The rating considers the nature of the project, the potential direct and indirect E&S risks and impacts, and the recipients/borrowers' capacity and experience on the Environmental and Social Framework implementation including managing the environmental risks and impacts. The project will have moderate E&S risks and impacts associated with its activities, such as construction of mini off-grids for rural electrification and scaling up for off-grid solar markets in accessing rural industries, urban areas, and public buildings. Other potential risks include generation of electronic and hazardous wastes, noise and dust emissions, solid waste, occupational and community health and safety risks, traffic obstruction, displacement of project-affected persons, gender-based violence, employment of underage workers, labour management issues and labour influx common to civil works, and procurement of non-energy-efficient energy machinery. Potential adverse E&S impacts are site specific and reversible, and mitigation options are available.

Environmental and Social Procedures for Mini Grid Developers

Initial E&S Screening

Before any construction or preparation of construction can start, the institution should conduct an initial E&S screening before or during project design stage, to (1) ensure the proposed construction site is not under any situation in the Environmental and social exclusion list as follows:

- Sites that do not comply with relevant environmental and social national or state regulations of Nigeria
- Sites located in legally protected areas (e.g. national parks, conservation areas, forests)
- Sites located in internationally recognized areas
- Sites located in critical natural habitats
- Sites where mini grid construction and operation will cause significant degradation of natural habitats (e.g. mangroves)
- Sites in flood-prone zones
- Sites located on land from which government agencies or builders have removed / involuntarily resettled local communities, including squatters or encroachers, without proper compensation
- Sites located on land associated with illegal forced evictions of previous owners or occupants
- Sites in locations and / or developed in a manner that involves significant adverse impacts on physical cultural property

Environmental and Social Risk Screening

This procedure outlines steps required for initial transaction screening for E&S risks. The screening process begins with the identification of a potential new developer.
The initial screening involves the following steps:

- E&S screening in order to assess the developers' sites against the Exclusion List and List of E&S Sensitive Activities.
- Developers submits the completed E&S screening checklist in line with other documents for evaluation.
- The E&S safeguards unit assesses the results of the screening checklist and requests additional information, as appropriate.
- The E&S safeguards unit will participate in all relevant investment review meetings at the early stages of decision-making and provide inputs and recommendations with regard to E&S issues.
- The E&S safeguards unit using the filled checklist assigns an initial E&S risk category to the developer. E&S risk categorization will take into account type, and specific E&S risks and impacts associated with a developer's portfolio.
- In determining E&S categorization, the E&S safeguards unit will follow the Environmental and Social Management System (ESMS) Policy, and take into account relevant requirements of the World Bank and the national laws
- The E&S unit documents the summary of the initial risk screening and risk categorization in the E&S risk screening, assessment, and categorization.

For eligible projects, the following process is in place:

- Projects identified as *low risk* require a waste management plan, for example, solar home system (SHS) distributors, requirement to follow SHS distributors ESMS basic requirement (annex XII in the ESMF).
- Transactions identified as *medium risk* as in mini grids require further E&S due diligence, hence, development of an Environmental and Social Management Plan (ESMP), which is commensurate with the risks and impacts identified during the screening stage, are necessary to determine whether the developer is committed to improving its E&S risk management policies and procedures, as well as E&S performance in relevant business activities. Further assessment and E&S due diligence requirements, if needed, are applied.

Review and Appraisal

This procedure outlines the steps to assess E&S risks and identify mitigation measures and actions, where deemed necessary in compliance with the applicable E&S laws and regulations of Nigeria, as well as the requirements of the World Bank ESS.

Upon completion of the initial screening, if the developer is eligible, an E&S risk assessment is conducted to evaluate the level of risk associated with a developer's portfolio. Where necessary, the REA-PMU conducts further E&S due diligence commensurate with the risks under assessment. In complex or high-risk circumstances, the developer will be required to develop an Environmental and Social Impact Assessment (ESIA), followed by a Livelihood Restoration Plan (LRP).

The E&S safeguards unit of the REA-PMU is responsible for E&S review and assessment, and completes the following steps:

- Requests and reviews detailed developers' existing and proposed portfolio information to determine the level and nature of E&S risks associated with the relevant projects. The portfolio review will include exposure to Excluded Activities and E&S Sensitive Activities and high-risk exposures.
- Request and obtain evidence of the developers' ESMS and capacity for its implementation. The review will include the following aspects of the developers' portfolio and capacity commensurate with the nature of the activities supported:
  - E&S policy and senior management approval thereof,
  - Procedures and tools to identify and avoid, and if avoidance is not possible, mitigate E&S risks and potential impacts,
  - E&S provisions in legal documentation of all projects; performance monitoring procedure and records, as relevant to E&S risk management,
  - Adequacy and quality of ESMS implementation to date,
  - The current organizational structure and capacity as relevant to E&S risk management, and
  - Commitment of the client to undertake E&S risk management requirements.
- Requests and obtains information about the developers'/distributors' compliance with national labour laws.

- Developers provide a screening checklist to the E&S unit to get a final site categorization based on the detailed information and due diligence actions as carried out by the developer.
- The E&S unit updates the E&S Risk screening, assessment, with the results of the E&S review and appraisal.
- The E&S risk screening, assessment, and categorization memorandum for each site is filed in the REA-PMU Odyssey platform.

Based on the results of the initial E&S screening, all mini grid projects should be divided into two E&S impact categories:

- Category I: with significant E&S impacts. High-risk sites such as those in sensitive habitats, with potential physical and/or economic displacement, and substantive number of migrant workers stationed in communities.
- Category II: Moderate-risk activities with no high potential for harming people or the environment. Risks and impacts not likely to be significant.
- Category III: No high-risk activities expected.

E&S Risk Management Instruments for Category II Mini Grids

For construction with perceived medium or low E&S adverse impacts, only the ESMP is needed. Before any actual construction can begin, all necessary government and nongovernmental clearance and permit(s) must be acquired properly and timely.

High-Risk Listing

The REA-PMU will maintain the E&S High-Risk List (HRL). The HRL is a group of transactions that require closer scrutiny and supervision due either to highly significant E&S risks or because the developers' project sites have attracted the attention of third parties, such as civil society organizations, project-affected people, and/or media for alleged E&S shortcomings, impacts, and associated reasons. All such subprojects on the HRL shall be subjected to restriction and excluded from DARES.

The E&S unit is responsible for periodic monitoring (quarterly at a minimum) of project sites under DARES. However, it is expected that developers will have resident E&S safeguard experts who will liaise with the E&S unit of the PMU in the event that any of their project sites falls within the above categories, the local E&S officer is responsible for notifying the E&S unit of the PMU of this development.

E&S unit:

- Makes the final decision about placement of a developer site on the HRL.
- Periodically updates the HRL data in consultation with developers and E&S officers.

E&S Risk Management Instruments for Category I Mini Grids

Projects under this category are expected to have significant E&S impacts, such as (this list is not exhaustive, and a combination of all project impacts should be considered based on their likelihood and magnitude):

- Any physical and/or economic displacement;
- Significant adverse impacts on ecologically sensitive areas;
- Significant adverse impacts on cultural heritage;
- Significant number of migrant workers/labour camps within host communities (may be especially an issue for larger mini grids or clusters of mini grids);
- Biodiversity loss from land preparation;
- Poor labour and unsafe working conditions;
- Poor engagement of indigenous peoples/Sub-Saharan African historically underserved;
- Increase in community health and safety traffic risk from construction equipment and material movement;
- Risk related to voluntary land donation in case of public/community buildings;
- Consumer/user health and safety;
- Loss of land/and other physical assets;
- Site preparation impact leading to soil erosion and alteration of natural drainage;
- Land and water pollution due to indiscriminate disposal of electronic waste, chemical pollution, and waste disposal;
- Construction activity risk such as dust, noise, and occupational health and safety (OHS); and
- Loss of residential/commercial structures to non- titled holders.

Due to the potential significant adverse E&S impacts, construction under this category will have to complete the following E&S studies during the preparation stage:

- Environmental, Social Impact Assessment (ESIA)
- Environmental, Social Management Plan (ESMP)
- Resettlement Action Plan (RAP and /or Livelihood Restoration Plan (LRP) where physical and /or economic displacement may be involved
- Stakeholder Engagement Plan (SEP)

The ESIA describes possible adverse effects that the proposed subproject may pose to the environment. It recommends mitigation measures and how they will be implemented. The ESMP—either as an accompanying chapter of the ESIA, or as a stand-alone document—provides details on how the recommended mitigation measures will be implemented and outlines requirements, institutional arrangements/responsibilities, timelines, estimated costs, and sources of funds for management and monitoring of both positive and negative effects of the project.

The key E&S concerns related to mini grid construction and operation include the following:

- Ambient air pollution,
- Surface and ground water quality,

- Noise pollution,
- Traffic management,
- Labor management (labor camps, worker accommodation, community impacts of migrant workforce),
- OHS issues of workers,
- Interactions between workers and communities (e.g., human immunodeficiency virus [HIV]/ acquired immunodeficiency syndrome [AIDS] issues),
- Community engagement and benefit sharing,
- Drainage,
- Riverbank erosion,
- Wetland or other sensitive habitat deterioration,
- Land degradation,
- Loss of land/structures/assets/crops,
- Displacement of people or economic/livelihood activities,
- Sexual exploitation and abuse/sexual harassment (SEA/SH)
- Electronic and hazardous waste,
- Use of nonenergy and nonefficient machinery.

In case the project requires land acquisition, restriction of access to assets, or loss of livelihood or shelter, the company shall ensure that a satisfactory RAP and/or LRP has been prepared and consulted upon with the affected persons/local community, approved, and disclosed as required. The institution shall not start the works until compensation and resettlement assistance has been made available in accordance with the RAP and/or LRP.

The RAP/LRP document provides a link between the impacts identified and proposed mitigation measures to realize the objectives of involuntary resettlement. The RAP/LRP will take into account the magnitude of impacts and accordingly prepare a resettlement plan that is consistent with national and local standards and requirements.

The RAP/LRP also needs to be disclosed and consulted during timely stakeholder engagement. Stakeholder engagement is about building and maintaining constructive relationships over time. It is an ongoing process between a company and its project stakeholders that extends throughout the life of the project and encompasses a range of activities and approaches, from information sharing and consultation, to participation, negotiation, and partnerships. The goal is to ensure the timely provision of relevant and understandable information. It is also to create a process that provides opportunities for stakeholders to express their views and concerns and allows the company to consider and respond to them.

- Before any actual construction can begin, all necessary government and nongovernmental clearance and permit(s) must be acquired properly and timely. For the SHS distributors, an abridged ESMS is required (see annex XII in the ESMF).

Monitoring and Supervision

Once the construction has started, and throughout construction and operation, the REA-PMU is committed to continuous compliance to its ESMP and all applicable E&S policies including gender-based violence/SEA and requirements. To achieve that, the REA-PMU is committed to conducting regular self-monitoring activities.

Severe incidents will be notified to the Bank within 24–48 hours after learning of the incident or accident using the World Bank Environmental and Social Incident Reporting Template. A detailed report of the incident will be provided within 15 days of occurrence of the accident. In the event of an occupational fatality or serious injury, the IA /contractor shall report to the REA/PMU and consequently escalate to the Bank as soon as they are aware of such incidents. Relevant government authorities shall be informed as applicable. Corrective actions shall be implemented in response to project-related incidents or accidents. The REA-PMU in collaboration with the relevant IA/contractor as applicable, will be required to conduct a root-cause analysis for designing and implementing further corrective actions with the support of the Bank.

REA will monitor the E&S performance of all subprojects during implementation. The monitoring will focus on: (i) implementation of the ESMS; (ii) compliance with E&S requirements including E&S covenants in legal documentation; and (iii) E&S performance in terms of OHS incidents, waste management, HR policies, and grievance mechanism. To this effect, all participating firms/developers shall provide an incident report immediately after occurrence (in case of an incident as defined in REA's ESMS). REA shall submit a monthly E&S monitoring report to the Bank along with supporting documentation as applicable. REA shall conduct scheduled site visits as part of its monitoring and supervision.

Reporting to REA during Construction and Implementation

It is the mini grid developer's responsibility to submit timely and factual reports to REA based on the mandatory and/or agreed-upon reporting requirements. Such a report will include:

- Progress on implementation of the ESMS, including categorization of all projects and any ESIAs, ESMP, and RAP and/or LRP prepared over the reporting period (where required);
- Regular periodic E&S reports as specified in the Operating Guidelines;
- Prompt reporting—within three days of occurrence of any social, labour, health and safety, security, or environmental incident, accident, or circumstance which may have any material impact on the compliance of the applicable E&S requirements.

In addition, developers may be requested to:

- Provide feedback when requested by REA through questionnaires, evaluation workshops, and so on;
- Participate, if needed, in discussions with the PMU, REA, and any investor (if applicable) throughout the project.

Environmental and Social Procedures for SAS/SHS Distributors

The E&S unit of the REA-PMU is responsible for E&S review and assessment, and completes the following steps:

- The E&S safeguards unit requests and reviews detailed developers'/distributors' existing and proposed portfolio information to determine the level and nature of E&S risks associated with the relevant projects. The portfolio review will include exposure to excluded activities and E&S-sensitive activities and high-risk exposures.

- The E&S unit shall request and obtain evidence of the developers' ESMS and capacity for its implementation. The review will include the following aspects of the developers'/distributors' portfolio and capacity commensurate with the nature of the activities supported:

  - E&S policy and senior management approval thereof,
  - Procedures and tools to identify and avoid, and if avoidance is not possible, mitigate E&S risks and potential impacts,
  - E&S provisions in legal documentation of all projects; performance monitoring procedure and records, as relevant to E&S risk management,
  - Adequacy and quality of ESMS implementation to date,
  - The current organizational structure and capacity as relevant to E&S risk management,
  - Commitment of the client to undertake E&S risk management requirements,
  - E&S unit of the PMU requests and obtains information about the developers'/distributors' compliance with national labour laws.

The key environmental and social concerns related to SHS distribution and operation include the following and special care needs to be taken to ensure compliance:

- Ambient air pollution,
- Noise pollution,
- Traffic management,
- Labour management (labour camps, worker accommodation, community impacts of migrant workforce),
- OHS issues for workers,
- Interactions between workers and communities (e.g., HIV/AIDS issues),
- Community engagement, benefit sharing,
- SEA/SH,
- Electronic and hazardous waste,
- Use of nonenergy and nonefficient machinery.

Moreover, it is expected that all SHS distributors provide basic requirements regarding the institution's ESMS (annex XII in the ESMF). Thus, for SHS distributors who are interested in being qualified for the

DARES components, three basic requirements for the institutional management of E&S issues, which also requires the SHS company to commit sufficient resources and capacity to implementations, are required.

Human Resources Policy

The SHS company will have in place an HR policy that expresses its commitments, at a minimum to: (1) comply with all relevant national labour laws and regulations; (2) promote the fair treatment, non-discrimination, and equal opportunity for workers; (3) establish, maintain, and improve the worker-management relationship; (4) allow workers' organizations and collective bargaining; (5) have in place a grievance mechanism for workers; (6) not employ forced labour or child labour, including not hiring workers below minimum age, as defined by national law and not employ children in hazardous work.[1]

The SHS company will adopt and implement HR policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of national law. It will provide workers with documented information that is clear and understandable, regarding their rights under national labour and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur. It will provide and inform workers of an internal grievance process to raise their workplace concerns.

Occupational Safety and Health Policy/Guidelines

The SHS company will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. It will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. The OHS guidelines will also include steps, as relevant, for HIV/AIDS prevention. It will also include a concrete plan for monitoring compliance with the guidelines in the SHS company operations.

Battery Collection/Recycling Policy

If an SHS company has an existing battery collection and/or recycling policy, this should be submitted with the application.

It is preferred that batteries are recycled to potentially reuse some of its components, where economically and technically feasible. This would be equally applicable for expired batteries and the batteries that will be replaced within the warranty period due to manufacturing fault or reasons outlined in warranty conditions.

The company shall systematically collect used battery units and engage with communities on the importance of recycling, if such a program is in place. The suggested options that can be considered are:

1. **Collection of batteries by SHS companies.** The SHS company representatives will make arrangements to collect the battery units from the consumer and store it in the local offices. The

SHS company will take necessary measures to ensure safe storage of the batteries. It may be feasible for an SHS company to send the warranty-expired batteries to a central location.

2. **Potential battery disposal/recycling options can be as follows:**
   - **Buy-back arrangements with manufacturers.** An SHS company can put in place buy-back arrangements (provide evidence of certificate from a Producer Responsibility Organization (PRO) recognized by the National Environmental and Standards and Regulations Enforcement Agency (NESREA)), with the battery manufacturers and ensure safe transportation of the batteries to the manufacturer. The SHS company and manufacturers can mutually decide on cost sharing of collection and transportation of expired batteries, for example, sign a Memorandum of Understanding between them.
   - **Recycling at own facilities.** SHS companies may consider establishing their own recycling facilities. Recycling of lithium-ion batteries is possible but, according to research and practice, makes little economic sense. Lithium-ion batteries can be recycled, but only at specified locations. Projects are currently underway in Europe, the United States, and Japan to develop effective and feasible recycling technologies with a complete life-cycle analysis of recycling.

IV.F • Project Intergovernmental Relations

The unit is to foster a harmonious working relationship with states on the DARES and other REA programs. This will cover the strategic engagement with federal, state, and local governments' ministries, departments, and agencies and other relevant stakeholders in the implementation and delivery of the Nigeria DARES Project. The following activities will be implemented under the DARES program:

1. Strategic planning for state engagement on DARES and sustainability of the project

a. Launch the DARES program.
b. Stakeholders' workshop with the states' government
   I. Identify the key energy actors in governments, private organizations, and other international players for stakeholders, workshops, and institutional strengthening.
   II. Conduct workshops with states:
      - Provide the necessary information/support for states' participation in the solar rooftop program and other components of DARES.
      - Ensure creation of an enabling environment and smooth working relationship between the states, mini grid developers, and renewable energy players via issuance of permits/licenses, provision of land for project site and issuance of certificate of occupancy, creating access roads to selected Project sites, and sensitization of the local communities on security of projects.
      - Proper coordination and flow of information among stakeholders including federal, state, and local government; private developers; and renewable energy companies.
      - Encourage states to develop mechanisms for the project's sustainability in the local communities and states.
      - Encourage states to:

- Conduct project prefeasibility studies toward establishing states' electrification roadmap;
- Plan for synergistic infrastructure projects in energized communities for greater impact;
- Catalyze end-to-end value chains for local firms to grow and local resources to be utilized.

2. Development of framework for states' participation in DARES

Eligibility criteria for state participation in DARES

a. States' policy documents
b. Criteria for states' implementation of solar rooftop

https://docs.google.com/document/d/19Xm73vPvagu7pyfLkDFTmdOkTt5R-6Go/edit?usp=sharing&ouid=111160131988401155178&rtpof=true&sd=true

3. The practical implementation of the agreed framework with the state government for accelerating electrification in rural communities through:

a. Advocacy visits to the states and other relevant stakeholders,
b. Awareness programs to chairmen of local governments areas to learn the potential benefits of the DARES project and how to key in through state participation,
c. Advocacy to other sectors of the economy for optimal utilization of energy generated under the Nigerian Electrification Project (NEP) and DARES,
d. Link DARES with other World Bank–supported programs in the states, and
e. Post-impact review of stakeholders' management for restrategizing.

4. Intergovernmental relations activities on REA programs at the subnational level (states)

REA is the primary implementing agency for the project with some TA activities being implemented at the state level by the designated state agency. The agency has the mandate to increase rural access.

The intergovernmental unit together with the REA team will perform the following:

a. Provide guidance toward the establishment of energy institutions/documentations and sharing of templates with states that are yet to develop electricity policies as follows:
    i. State rural electrification board or equivalent.
    ii. Local government implementation committees.
    iii. State energy working group.
    iv. State policy documents on energy.
    v. State energy roadmap.
    vi. DARES to leverage on the electricity plan from the state on:
        - Identification of the unserved and underserved communities for quick intervention, especially areas that have the distribution company presence but have not been provided electricity in the last five to ten years.

- Discussion on the priority communities with the state governments, for example, public buildings.
- Sharing of information with the interested developers under DARES.

b. Conduct stakeholders' workshops with the relevant ministries in the states/Nigerian Governors' Forum /Nigerian Electricity Regulatory Commission (NERC)/Nigerian Electricity Management Services Agency/distribution companies/chairmen of local government committees/developers/donors/United States Agency for International Development and six geopolitical zones through the REA zonal coordinators.
c. Categorize the states into groups according to compliance and level of functionality for interventions to the states as may be required.
d. Visitation to the states on a need-by-need basis.
e. Strategic plans for the implementation of rural electrification projects in achieving the efficient implementation of rural electrification nationwide.
f. Arrange TA as may be practicable and encourage state governments to provide technical and financial assistance including training, human capacity development, and transfer of any required technology to the local communities in their domains for the attainment of the national targets on rural electrification.
g. Strong alliances with states and local government areas (LGAs) that can be used to resolve disputes arising from acquisition of land and access to land for rural electrification projects.
h. Consider and advise the states and LGAs on the adoption of the best strategies for the realization of the rural electrification strategy and implementation plans.
i. Monitoring of rural electrification projects nationwide through the use of the Geographic Information System and geo-mapping technologies to effectively generate and analyze project data without physical visits to project locations.

IV.G • Information Technology

The information technology unit makes sure the DARES program stays innovative by adopting and integrating new technologies, streamlining and automating many processes, leading to increased efficiency in day-to-day operations, and is responsible for managing the technology that keeps the project running smoothly. The following activities will be implemented under the DARES program:

1. Project Information and Feedback Unit (Call Center)

As the NEP continues to gain traction with improvement in its national and subnational engagements and outreaches, there is a need to set up proper digital platforms to provide smart office experience, enhance efficiency, effectively manage stakeholders' engagement, feedback, enabling the collection of valuable data from users' interaction, which can be monitored and analyzed to form critical decisions.

The following will be implemented under the feedback unit:

- **Toll-free lines.** Manage a toll-free telephone line, where users can call into the DARES program for enquires without having to pay for the call credit.

- **Call assist service with voice prompts.** Provide interactive voice response systems using prerecorded messaging content, for example, asking call-in users to press a tab on their phones for specific program information or to speak with call center staff in a preferred language, and so on.
- **Online chat engine.** Manage a real-time stakeholders' engagement channel and support ticketing environment on the DARES website to engage with stakeholders on a real-time basis and respond automatically to inquiries based on Project's frequently asked questions from the NEP programs and predetermined responses prompted by user inputs.
- **Reporting and analytics.** Provide biweekly/monthly reports and analytics on user's engagements, transcripts, quality assurance, volume, patterns, and trends.
- **Stakeholders contact database scale-up.** Maintain stakeholders' contact database and strategic scale-up through regular email subscription request process to capture new users and stakeholders on a regular basis for targeted and strategic messaging broadcasts.

2. Project Digital Filing and Archiving System

The objective of the proposed Document Filling Solution is to automate and simplify the creation, organization, storage, retrieval, and sharing of documents in digital form within DARES. This will facilitate quick and easy access to documents, irrespective of geographical locations, fostering a more flexible and secured collaborative work environment by providing a centralized platform for document capturing, storing, sharing, version control, and contributing to environmental sustainability by reducing reliance on huge volumes of paper.

The following will be implemented under the data filing and archiving activities:

- **Document capture and file database.** Implement Optical Character Recognition technology to scan and convert documents into portable digital format in an organized and searchable manner and store them in a database, using document naming conventions to ensure consistency, with recorded relevant metadata details such as date, project name, author, date created, and keywords.
- **Remote access.** Set up M-Files cloud archiving license to store and manage a Project repository with document-related tasks such as indexing categorization of documents based on metadata, keywords, and other relevant information which are accessible through the internet to the storage on premise.
- **Access control.** Track document creation and capture activities and generate reports such as document volumes, types, and user log activities for analysis and implement a role-based access control to assign permissions based on the principle of least privilege.
- **Cybersecurity awareness.** Categorize training on cybersecurity compliance awareness, data vulnerabilities, cyberattack, privacy policies, and guidelines for secured document handling to ensure availability, integrity, and confidentiality.

3. Energy Information Database, Data Protection, and Retention

There is already a robust data pipeline in place and more data is being harvested on a daily basis through the many activities under the NEP of REA. These data are becoming very valuable for effective electrification planning through the tracking of key performance indicators from the design phase to the productive use.

In order to standardize data sharing and to ensure that all stakeholders are providing accurate information we can trust, there is a need for all relevant authorities to agree to give consent to a responsible use and data sharing methodology to define coordination roles and effective collaboration to maximize the potential of these data.

DARES will implement a transformative platform that bridges the gap between disparate data sources and systems, offering a user-friendly interface that allows users/REA admins to aggregate and unify data from various energy management sources into a single coherent interface seamlessly with a goal to collate and warehouse data, streamline representation, communication, management, and analysis to improve the decision-making process.

The following will be implemented under the energy information and data sharing activities:

- **Unified organized data space.** Design and implement a unified dataspace that will interact with all relevant data processors to collate and warehouse data sets in raw form, process the received data into a customizable virtualization dashboard of project case studies, important key performance indicators, and outstanding reports. This dataspace will act as a mirrored repository of all REA data sets.
- **Responsible data sharing framework.** Implement technical data sharing standards and communication protocols with data processors to improve trust, coordination, consent, and collaboration among stakeholders such as deciding on how data can be collected and warehoused. This framework will expose the DARES webapp to automated data consumption and warehousing through standardized communication protocol such as HTTP Get Request, that would establish remote connections with data processors and other customer management systems
- **Compliance to Nigeria data protection regulations** DARES is to comply with the data processing regulations as announced by the Nigeria Data Protection Council by using appropriate technical and organizational measures, in the fulfilment of DARES' obligations to honor the rights of its data subjects (developers, grantees, or beneficiaries of DARES) according to Sections 34–38 of the Act, and ensures the security, integrity, and confidentiality of personal data as required in Sections 39 and 40 of the Act.

4. Dedicated Web Pages and Online Application Portals for DARES

The DARES project will implement dedicated web pages and online application portals that will make information about the project easily accessible to a wide audience. This will serve as a centralized hub

for all information related to the project, provide a platform for effective stakeholders' interface, and streamline application processes for different components under the project.

The following will be implemented under the dedicated web portals' activities:

- **Dedicated website.** Develop a dedicated web portal for content referencing which will serve as the primary source of information dissemination and repository of project documents, media activities, and news items under DARES.
- **Mini grid NERC permit portal.** Redesign a portal for DARES- mini grid NERC permit portal for fast tracking NERC applications for the solar hybrid mini grid component.
- **Mini grid environmental impact assessment (EIA) permit portal.** Redesign a portal for DARES mini grid EIA permit portal for fast tracking EIA permits.
- **Maintenance and subscription procedure.** Develop a maintenance framework to renew relevant licenses and plugins, update website content, dashboards and scripts, extend functional requirement, conduct regular web scrubbing, and develop electronic newsletters.

IV.H • Communications Unit

The mission of the communications unit is to build, promote, project, and sustain a corporate image guided by rational thought, high ethical and professional standards, as well as commitment to excellence. To achieve this, the unit will secure maximum positive publicity through effective and efficient information dissemination and management mechanisms and using tested schema that guarantees sustained popular and alternative media coverage of DARES activities to ensure maximum goodwill and visibility for the Project. Importantly, the focus of the communications campaign at any material time will be clearly defined and guided by the overriding goal of REA's strategic mission.

This unit will be served by an external communications consultancy.

IV.I • Fast Track Units

NERC Fast-Track Unit

The NERC Fast-Track Unit (NFTU) provides support to the mini grid component and consists of NEP consultants embedded at the NERC. In a bid to foster interagency collaboration with key stakeholders such as the sector regulator, it is critical to maintain synergy with principal partners for the attainment of DARES' objectives and to assist developers admitted into the Program with obtaining the necessary authorizations for the operation of their mini grids in a timely fashion.

The primary mandate of the NFTU is summarized as follows:

- Lead the review process for mini grid applications by conducting thorough due diligence on all applications including company registration documents, construction contracts, supplier agreements, joint venture agreements, and other required documentation in accordance with the provisions of the NERC mini grid regulations.
- Ensure the prompt receipt of approvals and authorizations for completed applications.

- Facilitate discussions between applicants and NERC and offer guidance to applicants with respect to pre and post submissions.
- Build relationships between NERC and REA.

Summary Guides

In furtherance of the above, the NFTU developed an application toolkit consisting of a summary guide of preregistration steps, details on the application process, as well as an infographic and frequently asked questions; designed to arm developers with the requirements to secure approvals from NERC. With the advent of the amended Mini Grid Regulations 2023, updates will be made to these documents where necessary and will be republished on the home page of the dedicated application portal.

Dedicated Application Portal

Applications to NERC for mini grid authorizations are automated and streamlined resulting in review and approvals conducted and secured respectively via a dedicated web portal. Under DARES, the NFTU will partner with the information technology unit to ensure that the portal is adequately maintained, applicants' data is secure, and that the portal is fit for purpose with minimal downtime to ensure applications are received and treated diligently.

Engagement with Applicants

The unit will as required facilitate discourse between NERC and applicants for guidance on submitted applications or to gather information pertaining to outstanding documentation particularly for protracted applications, questions on the Commission's position with respect to a regulatory matter, and so on. The unit will also prioritize all requests for information and feedback on submitted applications as required.

Exclusivity Database

To prevent contention over sites, the NFTU will liaise with NERC to keep track of exclusivity agreements submitted to the commission in a bid to flag sites with competing interests and to keep appropriate records of submissions from developers under DARES.

ANNEX A

Component 3. Technical Assistance			
3.1.1. Strengthening of implementation capacities of REA and the FMoP			
Workstream	**Duration (year)**	**Resource estimate ($)**	**Comment**
Procurement of specialist and expert consultants in the PMU for the implementation of DARES	5		Consultants and specialist remuneration should be aligned with industry standards and pegged to the foreign exchange rate as of the last negotiation. This is essential for retaining talent, which poses a project risk. It is recommended that contracts issued should be for one year and rates be reviewed yearly.
Secondments to DARES and hiring of project officers and analysts	5		
Capacity building (retreat, workshops, training, conferences, etc.)	5		
Mini grid inspections and site commissioning (1 percent of total grant)	5		
Nigerian Electricity Management Services Agency institutional strengthening	5		
Consultancy services development and installation of stand-alone flexible accounting software for DARES	5		
Consultancy services for the engagement of an external auditor for DARES	5		
Conducting E&S monitoring activities/tracking end-of-life battery waste management	5		
Consultancy services for the implementation of the recommendations from the human resource assessment and optimization for operational efficiency of the Nigeria Electrification Project report	2		
3.1.2 Development of critical studies			

Workstream	Duration (year)	Resource estimate ($)	Comment
National electrification strategy and implementation plan PBC consultancy	1		**See PBC section**
Consultancy services for baseline survey for DARES			
Design and implementation of a grievance redress mechanism including institutional trainings, workshops, and capacity-building programs			
Productive use of equipment market linkage study			
3.2 DARES ecosystem			
Workstream	**Duration (year)**	**Resource estimate ($)**	**Comment**
Consultancy services for mini grid market intelligence and software platform for managing mini grids and stand-alone systems	5		
Consultancy services for the engagement of independent verification agents for the DARES project for the northern region of Nigeria	2		
Consultancy services for the engagement of independent verification agents for the DARES project for the southern region of Nigeria	2		
Consultancy Services for the engagement of grant administrator for the DARES project	1		
Consultancy services for engagement of project monitoring and evaluation firm for the DARES program	2		
Specialized consultancy services for holistic date architecture development, unified geospatial solutions, advanced management systems integration, including strategic data optimization, and enterprise resource management solutions deployment for the DARES program	2		
Specialized consultancy services for strategic media relations and advocacy, including multimedia production and program management	2		
Developing sustainable models for land acquisition in the states			
Consultancy services for engagement of a legal firm to support DARES			
Human resources firm			

Distributed renewable energy enhancement facility				5,000,000	
3.2.1 Geospatial planning platform for mini grids (Yes/No)2[I .I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
No	Yes	Yes	Yes	Yes	Yes
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Consultancy services for nationwide geospatial analysis, survey data collection for mini grids, market intelligence, and prospectus					
3.2.2 Pipeline of interconnected mini grid projects prepared (Yes/No) [I.I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
No	No	Yes	Yes	Yes	Yes
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Consultancy services for electrification verification and energy audit of potential interconnected mini grid sites			1		
Consultancy for front-end-engineering design studies for interconnected sites			1		
3.2.3 Pipeline of isolated mini grid projects prepared (Yes/No)					
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Consultancy services for electrification verification and energy audit of potential off-grid mini grid sites			1		
3.2.4 Building the PUE ecosystem, including geospatial mapping, demand stimulation, and capacity building of financial institutions on market-based products, pricing, and financial literacy					
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Development of a tool to determine customer/household eligibility for demand-side subsidies					
3.2.5 Implementation of the skills development program for solar supply chain (Yes/No) [I.I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
No	No	Yes	Yes	Yes	Yes

Workstream			Duration (year)	Resource estimate ($)	Comment
Qualified states receiving technical assistance (Number) [I,I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
0	1	1	2	2	3
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
3.2.6 Distributed renewable energy expert/advisor embedded at least one DISCO (Yes/No) [I,I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
No	Yes	Yes	Yes	Yes	Yes
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
3.2.7 Numbers of grievances received and resolved satisfactorily (Percentage) [I,I]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
0	15	30	55	75	95
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
3.2.8 Managing E&S risks, including the implementation of citizen engagement interventions					
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
3.3.1 Engagement with states to focus on supporting states in crafting their role in the energy transition agenda during decentralization by providing technical assistance for designing electricity markets, building capacity of state-level sector institutions, developing regulatory and procurement capacity, and preparing policy framework and its implementation					
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**

3.3.2 Engagement with states in determining viability for solar rooftop and setting up a one-stop-shop model for market creation—for interested and qualified states					
Workstream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Performance-based conditions (PBC)					
1: Presidential approval for a national electrification strategy and implementation plan (Text)					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
No national electrification strategy and implementation plan.	N/A	National electrification strategy and implementation plan prepared by the FMoP and REA in consultation with states and approved by the president.	N/A	N/A	National electrification strategy and implementation plan prepared by the FMoP and REA in consultation with states and approved by the president.
0	0	100,000,000.00	0	0	0
PBC allocation		100,000,000.00	As a % of total PBC allocation		13.00%
Work stream			**Duration (year)**	**Resource estimate ($)**	**Comment**
Consultancy services for development of a National Electrification Strategy and Plan for Nigeria					
2: Adoption and operationalization of a new business plan for REA (Text)					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
REA business plan does not allow for sufficient capacity to manage the scaled-up program.	N/A	Business plan prepared by REA, approved by the FMoP, and adopted by REA; and predefined KPIs satisfied by REA.	Predefined KPIs satisfied by REA.	Predefined KPIs satisfied by REA.	Improvement in KPIs to demonstrate REA increased capacity.
0	0	150,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00

PBC allocation		300,000,000.00	As a % of total PBC allocation		40.00%
Workstream			**Duration**	**Resource estimate**	**Cost**
3 : Improved regulatory framework (Text) [PBC]					
May-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28
Insufficient regulatory framework for mini grids in place.	N/A	(i) License and tariff applications processed in a batch by NERC; (ii) Notice for DISCOs to reach mini grids issued by NERC; (iii) Duties, rights, and obligations of communities in urban mini grids issued by NERC.	NERC mini grid regulations were revised by NERC to increase the maximum capacity of mini grids from 1 MW to 5 MW.	N/A	Improved regulatory framework for mini grids is in place.
0	0	150,000,000.00	50,000,000.00	0	0
PBC allocation		200,000,000.00	As a % of total PBC allocation		27.00%
Workstream			**Duration (Year)**	**Resource estimate ($)**	**Comment**

Note: DARES = Distributed Access to Renewable Energy Scale-Up; DisCo = distribution company; E&S = environmental and social; FMoP = Federal Ministry of Power; KPI = key performance indicator; MW = megawatt; NERC = Nigerian Electricity Regulatory Commission; PMU = project management unit; PUE = productive use of energy; REA = Rural Electrification Agency.