

2023

# Electricity Access Going the Last Mile

Overcoming Energy Poverty for the Most Vulnerable





# CONTENT

## 1. Context

- Status of Electricity Access Program
- Impact of Global Multiple Crises & Emerging Challenges
- WBG Response
- ESMAP Electricity Access Program Structure

## 2. ESMAP Activities and Achievements

- Our Products and Activities
- FY 23 Highlights and Reports
- Covid-19 Response

## 3. Country Case Studies

- Madagascar, South Sudan, Mozambique, Mauritania, Kenya

## 4. Beyond FY24

## 5. Annexes

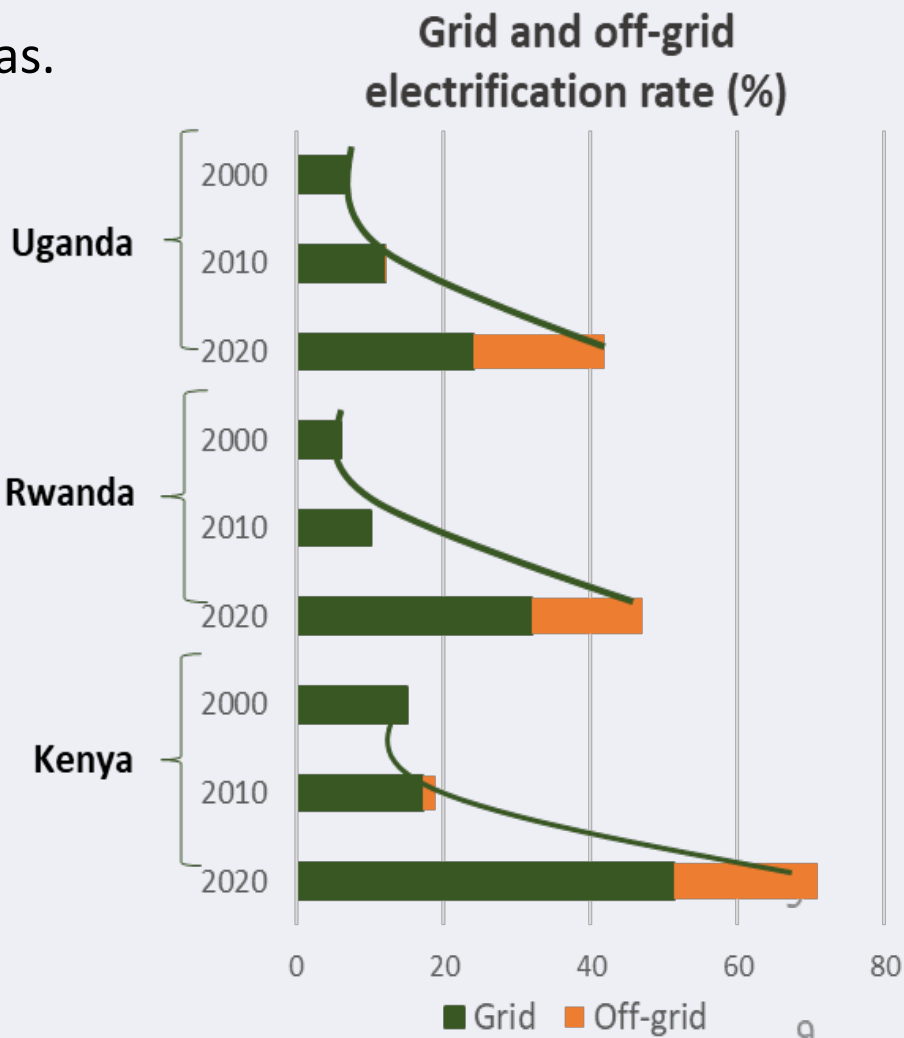




# Status of Electricity Access Program

2023

- Globally, access to electricity has reached 91% in 2021, up from just 78% in 2000.
- Countries are benefiting from least cost technologies and disruptive business models to increase pace of electrification in recent years.
- Governments are working closely with private sector to deploy Mini-grid and Standalone solar technologies at scale to electrify population living beyond grid areas.



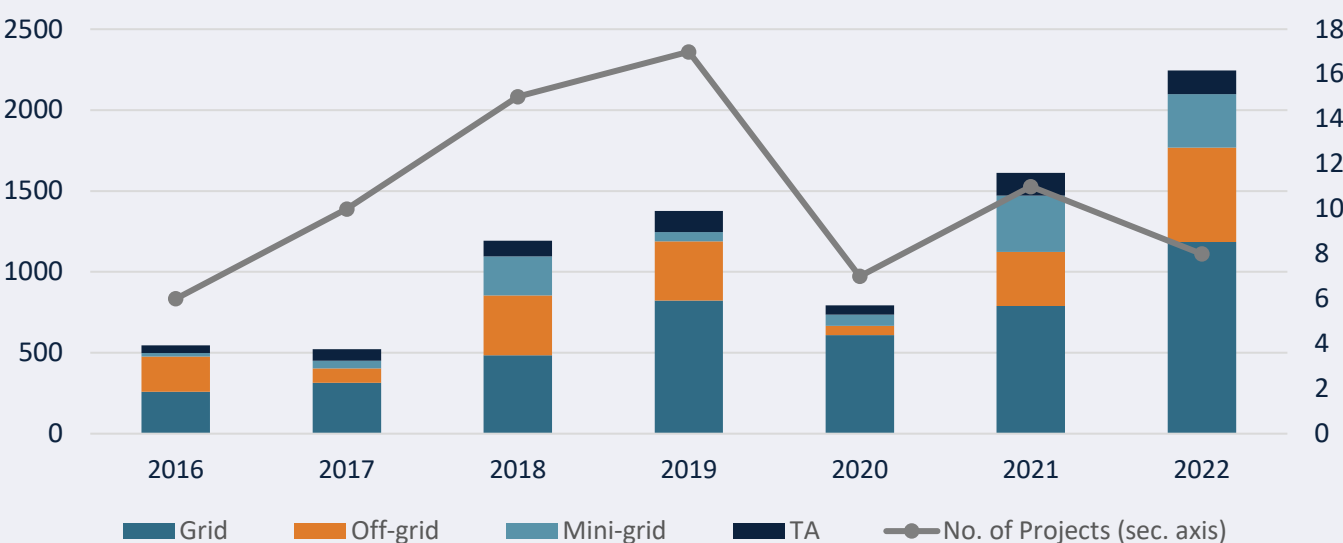
Data source: SDG7 tracking and MTF surveys

# Impact of Global Multiple Crises & Emerging Challenges

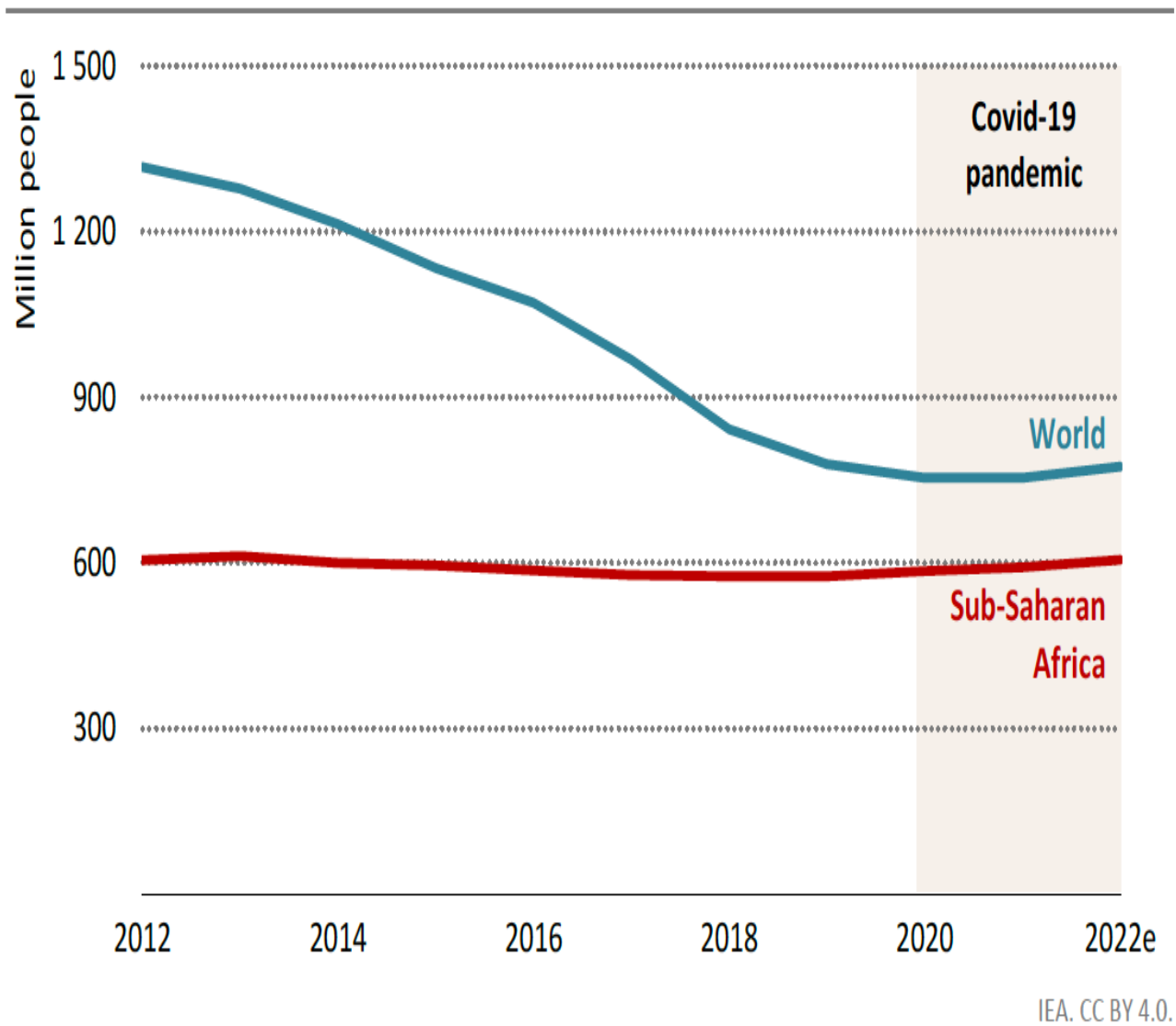
2023

- Impressive decade long progress of electricity access got stalled by global multiple crises of COVID-19 Pandemic, Climate Change and Ukraine War.
- Power utility creditworthiness deteriorated making the need of distributed renewable energy (DRE) resources more relevant to achieve SDG7
- Achieving SDG7 has become more challenging due to the global multiple crises.

Annual WB Energy Access Financing



Number of People Without Access to Electricity



Global progress towards universal electricity access

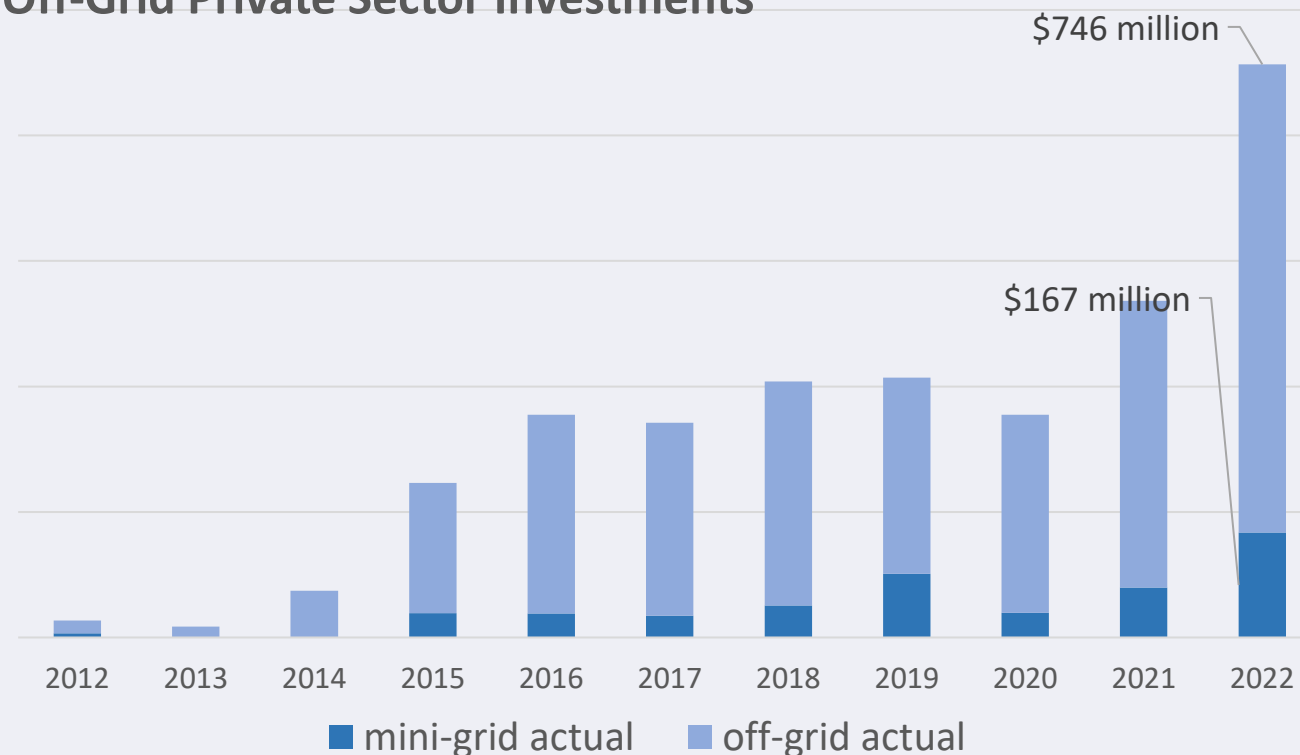


# Impact of Global Multiple Crises & Emerging Challenges

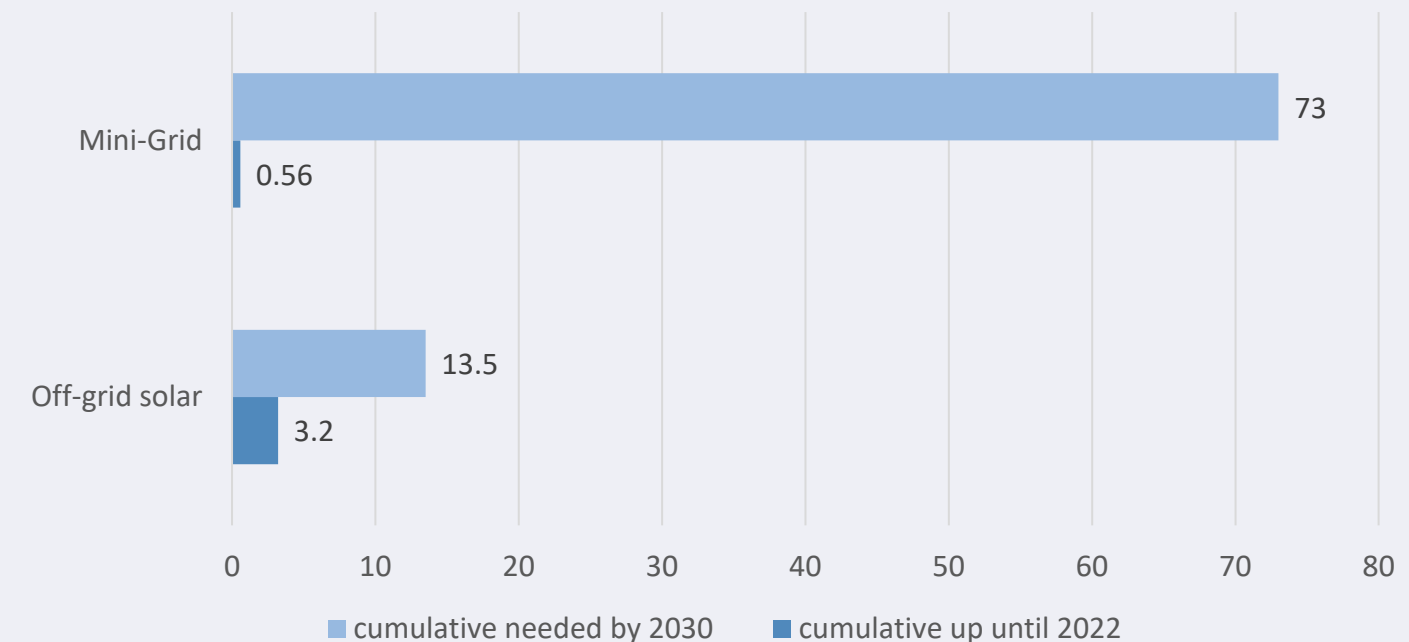
2023

- Private investment in DREs, such as mini grids and off-grid systems has accelerated over the past decade and reached a new record high in 2021 and 2022
- But cumulative investments in mini grids and off-grid are significantly short of what is needed to achieve SDG7 by 2030.
- A just and equitable energy transition cannot be realized without achieving universal access.

## Off-Grid Private Sector Investments



## Private Sector Investment Needs to Reach SDG7 (in USD billions)





# Impact of Global Multiple Crises & Emerging Challenges

2023

- **930 million people will remain without electricity by 2030** if the current pace of electrification continues.
- **89% of the population** who can be served most cost-effectively through mini grids and off-grid solar resides in countries where these technologies have hardly any track record.
- **1 billion people worldwide** are served by health facilities without any access to reliable electricity.
- Without cooling options, **14% of all global food production is lost**
- **A lack of** Irrigation means crops are producing 50% of their potential yield.
- The number of Forcibly Displaced Persons (FDPs) reached **82.4 million people** at the end of 2020.





# The WBG Response to Scale up Electricity Access

2023

ESMAP Electrifying Africa Program will support Distributed Access through Renewable Energy Scale up (DARES)

World Bank Commitments by 2026



100 million people



10,000 mini grids



100,000 schools & clinics



1 million SMEs



1 million farmers



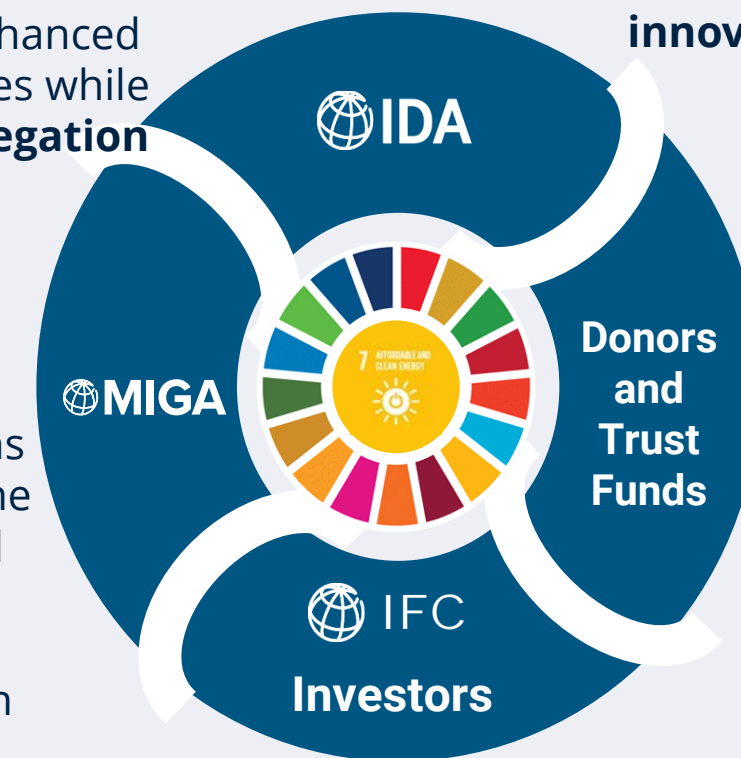
2 GW diesel replaced

DARES will be implemented through a partnership approach among WBG and other DFIs

ESMAP funded **Technical assistance** and **capacity building** through **Electrifying Africa Program** to promote best practices and enhanced development outcomes while enabling project **aggregation**

Strong **collaboration** with the WB and IFC and **co-creation** of **innovative solutions** is critical

**New** risk-mitigation solutions from MIGA will respond to the **unique risks** of distributed energy and **underserved segments** while catalyzing **private sector** participation



Targeted and smart subsidies, such as **RBF**, would encourage private sector involvement in difficult markets

**Partnerships** with **patient capital** investors and **impact** investors can facilitate **scale**, project aggregation, and transaction **efficiency** gains



# How is ESMAP Electricity Access Program Structured?

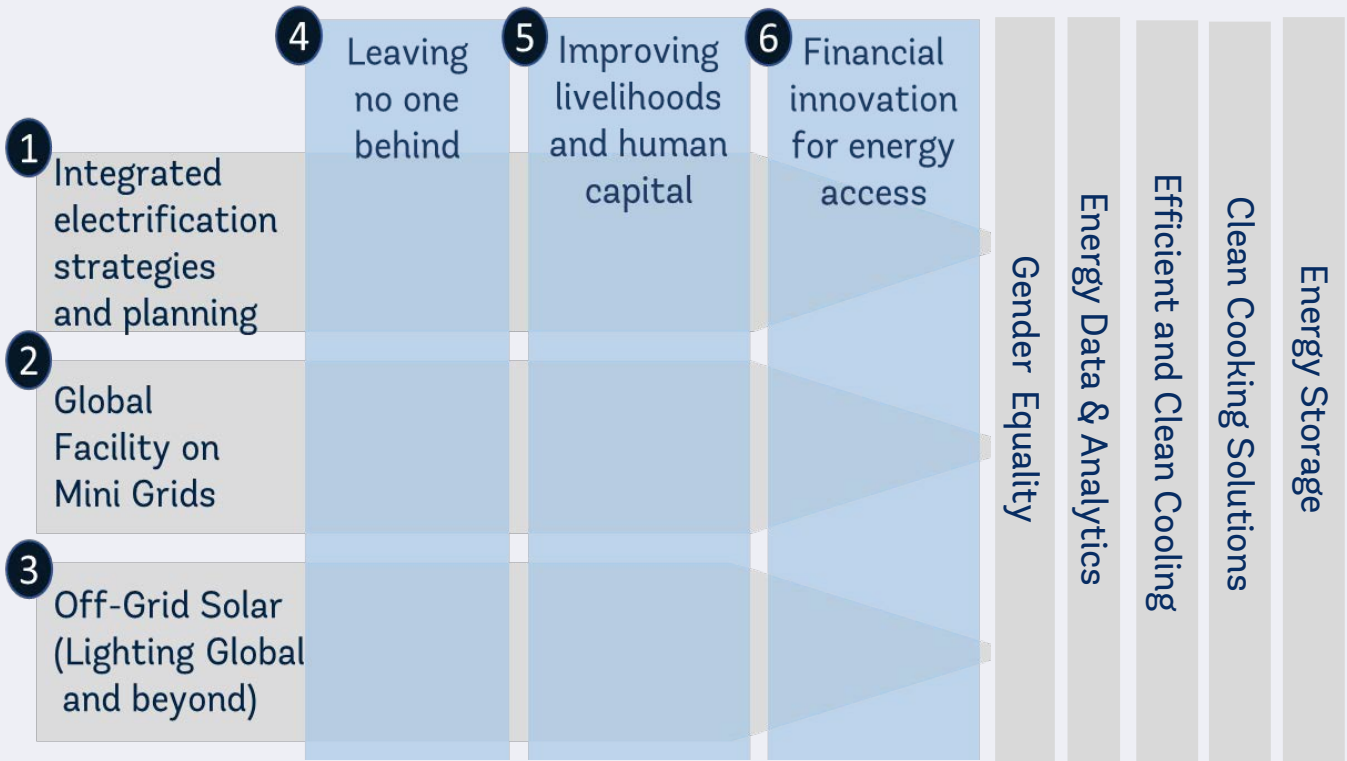
2023

## Who Are We?

*Adwoa Asantewaa, Ashish Shrestha, Barbara Ungari, Besnik Hyseni, Clemencia Torres, Marie-Gisele Morrison, James Knuckles, Johanna Galan, Juliet Pumpuni, Nathyeli Acuna Castillo, Raihan Elahi, Raluca Golumbeanu, Rutu Dave, Tatia Lemondzhava*

## How Are We Organized?

Six workstreams with shared objectives in Coordination with other ESMAP Programs





# With whom we partner and collaborate?

2023

## Our Internal WBG Partners

Internal collaboration with Agriculture, Water, Health, Education, FCI, Social Inclusion, FCV along with IFC and MIGA.

### Improving Livelihoods & Human Capital



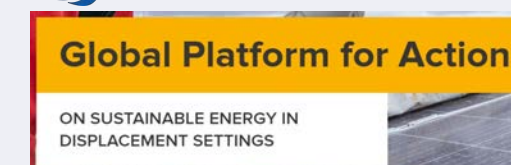
### Global Facility on Mini-Grids



### Lighting Global



### Leave No One Behind



### Integrated Electrification Strategies & Planning





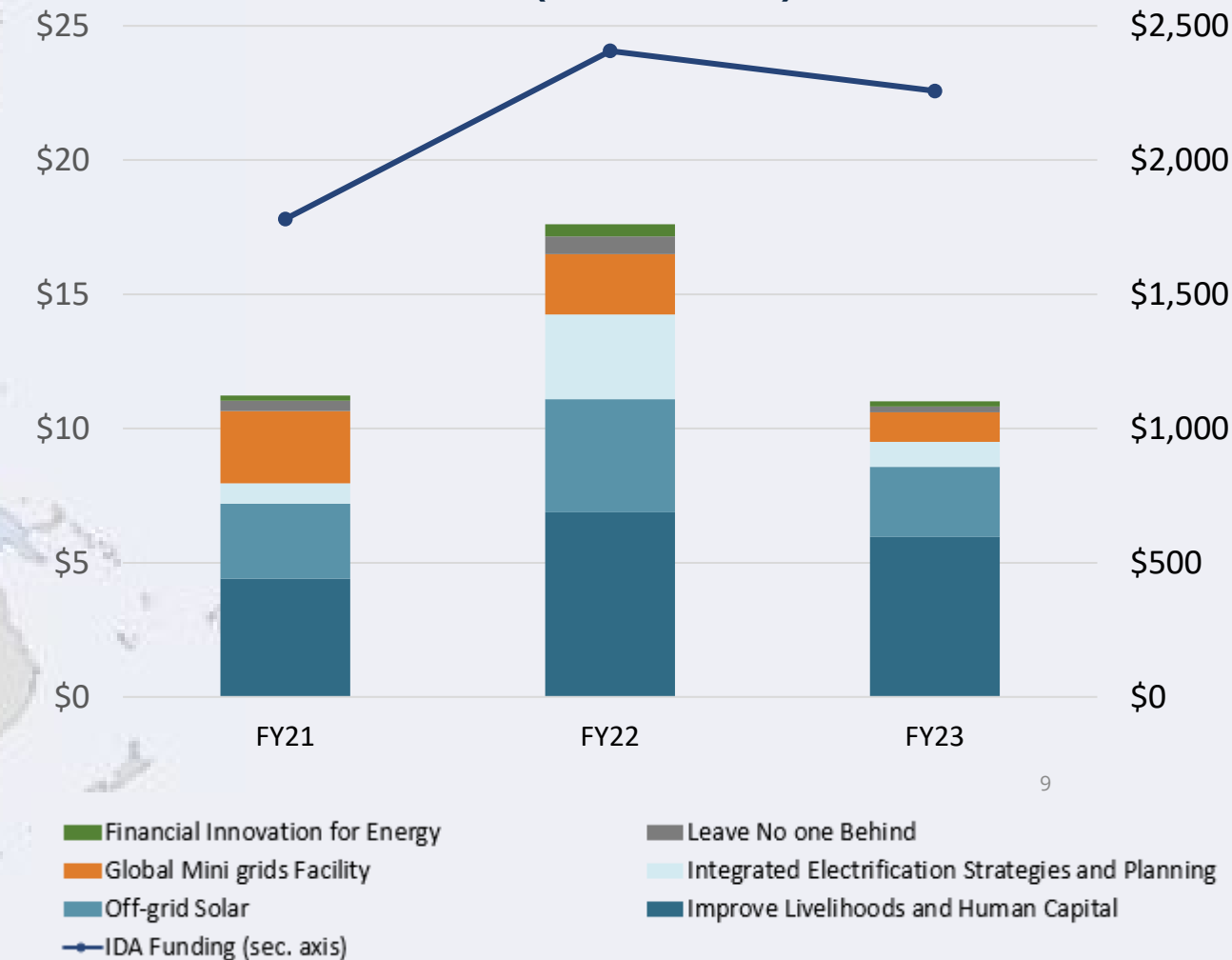
# The WBG Response to Scale up Electricity Access

2023

**\$39.8m ESMAP** support between FY21-23 across **96 countries**.



## ESMAP Grant Leveraging IDA Funding (million USD)





2023

# ESMAP Activities and Achievements



# Products and Activities

- **Convening role** in advancing electricity access agenda
- Center of expertise in developing and disseminating **knowledge products**
- Testing and mainstreaming **innovations**
- Informing and supporting **35+ World Bank-funded lending operations**
- Global “hub” for **data analytics**



# ESMAP Electricity Access – FY 23 Highlights

2023

## Pro-poor Focus

- **End User Subsidy Lab** (OGS): 4 pilots to address affordability challenges in collaboration with EnDev
- **PAYGO policy toolkit**: improving policies and regulation for faster uptake of pro-poor business models
- Analytics on business **models for refugees and displaced people** in HoA, Sahel and Lake Chad Basin. **HOMER Enabled Tool** to Electrify Displacement Settings.

## Mobilizing Private Sector Finance

- Launch of **DARES** to stimulate WB-IFC-MIGA cooperation
- Dissemination of guidance on **sustainable models for public facilities** (videos)
- First **sector-specific database** of private sector investment deals into mini grid companies

## Innovative Data Approaches

- **GEP** for assessing investment needs for electrification of health facilities
- **Vida Data Analytics** for collocation of mini-grid sites and productive uses in Nigeria and Ethiopia
- **Odyssey** for remote performance monitoring of public facilities in Liberia and Burundi





# ESMAP Electricity Access – FY 23 Highlights

2023

## Gender Mainstreaming

- 100% operations **with gender transformative actions** (including gender assessments, activities and indicators)
- Survey for assessing the status of women in the OGS sector.
- [New gender handbook for practitioners](#)

## Convening Role and Partnerships

- **WHO-WB-SE4ALL-IRENA** Energizing Health
- Strategic collaboration with **Africa Mini-grid Developers Association**
- Collaboration with **FAO** on climate smart agriculture
- Strengthened partnerships with humanitarian actors, such as **UNCHR, ICRC, and UN** peacekeeping (LNBH)





# ESMAP – FY 23 Flagship Outputs

2023

- **Mini-Grid Handbook:** the first of its kind with unique analytics and guidance
- **Off-Grid Solar Market Trends Report:** the biannual go-to report for the sector
- **Productive Use of Electricity Report** to energize agriculture
- **Rethinking Energy Access Programs in Displacement Setting** presented in Geneva at the High Commissioner Dialogue for Refugees
- **Gender Equality in the Off-Grid Solar Sector**
- **Mini-Grid Action Learning Event** in Nairobi & **Global Off-Grid Solar Forum** in Kigali
- **Sustainably Electrifying Schools and Health Facilities** – A Series of Youtube Videos





# COVID-19 Response

2023

**Lending projects:** 22 active projects (240,000 public facilities)

**Pipeline:** South Sudan, Madagascar, Mali, Mauritania, Togo, Nigeria, PNG, Sierra Leone, Ethiopia, Kenya

**WHO-WB-IRENA-SE4ALL Energizing Health**

**Sustainable Electrification Models of Public Facilities Toolkit**

**Odyssey platform for remote monitoring:** Liberia and Burundi

## **Liberia:**

- procurement for 100 health facilities remotely monitored on Odyssey
- standardized modular expandable scalable PV/battery systems
- health donor coordinating group on PBF to ensure long-term O&M financing

## **Haiti:**

- PV + battery systems for 5 large hospitals with health and with WASH ministry to provide solar water pumps. Hospital systems currently being installed
- UNOPS implementation partner
- initial 1.5-year O&M provided by private sector funded by the WB; private sector develops sustainability plans
- new or improved electricity services for health and WASH facilities located in or near existing mini grids and mesh grids

## **Energy Access Relief Fund (EARF):**

- The \$68million fund supports 77 small Energy Access Companies across 17 countries with concessional loans to bridge cash constraints due to Covid-19 crisis. Fund was fully subscribed within less than 9 months.
- Companies receiving support are serving more than 4million customers and are employing more than 7,000 FTEs





2023

# COUNTRY CASE STUDIES

# Madagascar CASE STUDY

2023

Scaling up ambitions – from LEAD to the DECIM investment – DARES collaboration (IFC mini-grids) – cross-sectoral collaboration with Digital Colleagues



## SCOPE OF SUPPORT

### Digital and Energy for Connectivity in Madagascar (DECIM):

- \$400 million, out of which
  - 95 million mini-grids
  - 135 million OGS
  - 60 million public institutions

**DECIM is a follow on of the Least Cost Electricity Access Development (LEAD) Project** – a \$150 million project.

## UNIQUE PROJECT FEATURES

- **Cross-sectoral collaboration** with Digital GP – leveraging synergies between energy access and digital connectivity
- **Focus on inclusivity:** end user subsidies in collaboration with Social Protection GP
- **DARES Focus country:** collaboration with MIGA and IFC

## ESMAP SUPPORT

- **Hands on and just-in time support**
- Support in designing **End User Subsidy pilot** under LEAD for scale up through DECIM (leveraging end user subsidy lab)
- **Data and analytics:** geospatial analysis and MTF data

### RESULTS:

- Nationwide End user subsidies fully integrated into new project design, leveraging geospatial and MTF data



# South Sudan CASE STUDY

2023

Working in FCV contexts – strengthening institutional capacity and reaching the most vulnerable



## SCOPE OF SUPPORT

South Sudan Energy Sector Access and Institutional Strengthening project (US\$ 53M – P178891) is the first energy project that will be implemented by the government in South Sudan

- Grid densification and extension in Juba;
- Mini grid pilot;
- Electrification of health facilities and public institutions through standalone solar systems;
- Technical assistance and capacity building.

## UNIQUE PROJECT FEATURES

- Strengthen sector foundations to maximize sustainable future development and financing.
- Leverage existing infrastructure and institutional capacity to minimize implementation risk and achieve rapid impact
- Diversify components both geographically and institutionally to be as resilient as possible to the risks inherent in FCV operations
- Support the refugee population through the solarization of health and public institutions.

## ESMAP SUPPORT

**TA support to preparation: Pathways to Electricity Access Expansion in South Sudan (PASA - P175227)**

- Sector diagnostic
- Geospatial assessment
- Off-grid market assessment

**Hands-on and just-in-time support.**

**Expected results:** The project aims to benefit about 340,000 population through new electricity access; about 1.8 million population through solarization of health facilities from refugee camps and host communities.

# Mozambique CASE STUDY

2023

Cross-sector collaboration for increasing electricity access and broadband services



## SCOPE OF SUPPORT

Sustainable Energy and Broadband Access in Rural Mozambique (US\$ 343M - P175295)

- On-grid Peri-urban and Rural Grid Electrification (US\$ 240M);
- Utility operational performance (US\$ 30M);
- Off-Grid electricity access and clean cooking solutions (US\$ 50M); Broadband Access for Underserved Areas and Target Groups (US\$ 10M);
- TA and Implementation Support (US\$ 13M).

## UNIQUE PROJECT FEATURES

- **Integration of on-grid and off-grid** electrification, and clean cooking solutions.
- Collaboration **with the digital team**, for broadband access.
- Focus on **internally displaced people**: Thousands of people fled the northern districts of Cabo Delgado looking for safety and livelihoods opportunities.
- Gender-tagged project with **innovative solutions for women's** empowerment and employment.

## ESMAP SUPPORT

**The ESMAP's team has supported the following aspects:**

- Off-grid and clean cooking, namely the set up of a **RBF window** to provide incentives at the output and outcome levels and could expand to the impact level for deployment of energy services to households.
- Leaving No One Behind and energy access **solutions for Internally Displaced Persons**.
- Implementation of the **gender tag**



# Mauritania CASE STUDY

2023

Bringing energy access to poor, vulnerable, displaced and host communities



## SCOPE OF SUPPORT

Mauritania Energy Transition Acceleration (META) -- supporting the **energy sector transition** via wind, solar, and battery storage.

\$1b investment project (\$350m IDA)

**Access implementation scale-up plan** to include: (i) mini grid (ii) off-grid solar; (iii) clean cooking, (iii) productive use of energy and (iv) innovative financing as cross cutting

## UNIQUE PROJECT FEATURES

New electricity code marks a turning point in the countries energy access policy – focus on accelerating access through **distributed energy resources**

Creation of the **Rural Electrification Fund** to support PPPs and prioritize distributed renewables

**Data driven digital platform** for site identification, monitoring of distributed operations, and asset management for mini grid and off-grid

## ESMAP SUPPORT

Market analysis for **mini grids, off-grid solar, clean cooking (including e-cooking) and cross cutting support** on productive uses, public facilities, financial innovation as well as supporting women's entrepreneurial leadership.

**Ongoing displaced population and host community** and energizing renewables studies with gender dimension

# Kenya CASE STUDY

Kenya GREEN: 100% RE and 100% access by 2030

2023



## SCOPE OF SUPPORT

**Green and Resilient Expansion of Energy MPA** to increase access to electricity in Kenya in a financially and environmentally sustainable manner

- MPA US\$ 1.05 bil
- MPA Ph1 US\$ 300 mil

Increase **provision of RE** at competitive cost, improve **financial viability of off-taker**, energy **access scale-up**

## UNIQUE PROJECT FEATURES

- Long-term and sustained engagement through a **4-phase MPA**
- Ph1 P4R to address **utility reform** and expand **grid access** and clean cooking
- Focus on **productive uses**
- Subsequent phases to expand **grid and off-grid access** (leveraging lessons from KOSAP) and scale up competitively procured RE and deepen regional integration

## ESMAP SUPPORT

- ESMAP support on improved **electrification planning**
- **Demand stimulation** bringing international experiences
- **SRMI GCF funding** for competitively procured RE and mini-grid development
- **Efficient Cooling GCF**



# Plans for FY24 and Beyond -

## Aligned with Bank's Evolution Roadmap

2023

### Country Based Model:

further scale efforts to reach the poor and vulnerable, deepen country impact, and catalyze global action



### One WBG and cascade

approach: Scale-up action to reverse the erosion of economic growth, poverty reduction, and human development;

### Partnership for SDGs:

Sharpen its mission with greater emphasis on sustainability, resilience to shocks, and inclusion; to achieve its twin goals and the SDGs.

**Knowledge:** Creation and dissemination of Knowledge to allow equitable growth





# Plans for FY24 and Beyond

2023

## Continue to deliver knowledge products and capacity building activities

- Sustainable Electrification Models for Public Facilities
- Report on grid-connected and under-grid mini grids
- Pilot version of a RISE-style website for country-level mini grid data
- Online and in person training modules for client governments on building off-grid solar, mini-grid markets, productive uses of electricity programs
- REACH partnership: collaboration with 6+ key players to increase access in hardest to reach markets
- Develop E-Waste Management Toolkit to ensure climate friendly implementation of electricity access projects.

## Operational support to scale up access

- 25 operations in pipeline, out of which 10 in fragile countries

## Looking Beyond FY24

- **Long term vision:** MPAs and regional approaches to scale-up electricity access
- **Impact:** grid and off-grid as part of energy transition, private capital mobilization, partnerships
- **Poverty & Fragility:** smart, well targeted pro-poor subsidies, leverage digitalization and innovative business models
- **Increase socio-economic benefits:** cross-sectoral cooperation, ecosystem approach, leverage technology and financial innovation for sustainability
- **Social inclusion and gender:** cutting edge approaches to address the needs of various sectors of the population





# THANK YOU



# ANNEXES



# ANNEX 1: Results to Date

2023

Outcome Indicator	Business Plan Target	Realistic Target	Optimistic Target
1.1 Population with new electricity access resulting from universal access strategies, programs and plans by 2030	500 million people; of which 300 million mini grid/off-grid	225million	225million
1.2 People in households and/or micro and small enterprises and small-holder farmers with new electricity access	150 million people, of which mini grid/off-grid: 90 million	100million	150million
1.3 Schools, health clinics and other community facilities electrified	1 million public institutions	300,000	400,000
1.4 Electricity access financing mobilized (through IDA, IBRD, climate finance and associated Government, development partner programs and private sector investments)	US\$ 30 billion, of which US\$10 billion private sector	US\$ 13billion	US\$ 18billion

# ANNEX 2: FY 24 Pipeline

2023

Realistic Pipeline	P Number	Estimated BETF (US\$ Million)	Estimated RETF (US\$ Million)
Electrifying Africa PASA (including DARES)	P180743	\$50.00	\$10.00
Burundi Solar Energy in Local Communities	P164435	\$0.25	
Ethiopia ELEAP AF	P178895	\$0.30	
Second Additional Financing for Energy Access and Quality Improvement Project	P180575	\$0.30	
Enhancing Sierra Leone Energy Access Project	P171059	\$0.30	\$3.00
Cabo Verde Renewable Energy and Improved Utility Performance Project	P170236	\$0.75	\$5.00
Guinea Electricity Access Scale Up Project	P164225	\$0.40	
Haiti - Second Additional Financing Renewable Energy for All	P156719 P154351	\$0.50	\$ 6.50
Kenya Green and Resilient Expansion of Energy (GREEN) Program	P176698	\$0.50	
Madagascar - Digital and Energy Connectivity for Inclusion in Madagascar Project	P178701	\$0.50	
Mauritania Energy Transition Acceleration (META) Project	P179383	\$1.10	\$5.00
Namibia	tbc		\$10.00
Nepal Private Sector-led Mini-Grid Access Project	P179383	\$0.30	
Nigeria Distributed Access through Renewable Energy Scale-up Project	P179687	\$2.00	\$8.00
Papua New Guinea NEAP	P173194	\$0.50	
Quality Assurance and Capacity Building for the Off-Grid Solar Sector	P171037		\$3.00
Regional Eastern-Southern Africa Energy Access MPA	P180547		\$10.00
Republic of Congo	tbc	\$0.20	
Sao Tome - Access to Clean Resilient Electricity Project	P177099		\$5.00
Enhancing Sierra Leone Energy Access Project Additional Financing	P178677	\$0.30	
South Sudan - Energy Sector Access and Institutional Strengthening Project	P178891	\$1.05	
Somali Electricity Sector Recovery Project	P173088	\$2.10	
Togo - Inclusive Development through Electricity Access	P176769	\$0.20	
Yemen Emergency Electricity Access Project Phase 2	P178347	\$0.65	
Zimbabwe	tbc		\$5.00
<b>Optimistic Pipeline</b>			
Pakistan	tbc	\$1.00	\$3.00
Papua New Guinea National Energy Access Project	P173194	\$0.40	
Sudan – Energy Transition and Access Project	P176711	\$0.50	
Mali	P176633	\$0.40	
<b>TOTAL</b>		<b>\$64.50</b>	<b>\$ 73.50</b>



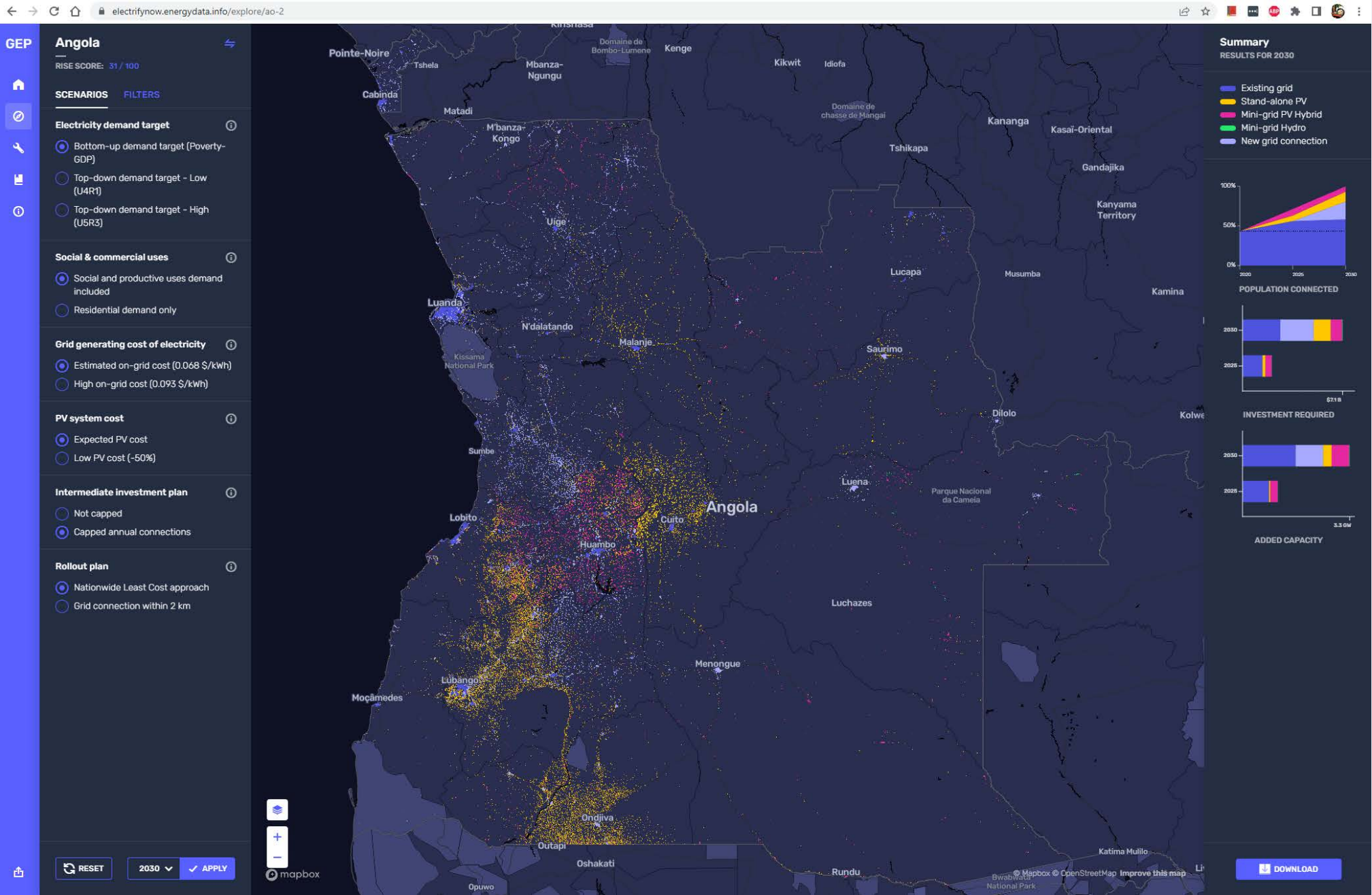
2023

# Electricity Access Program



# Integrated Electrification Strategies & Planning

2023



**Objective:** The window supports the development of national electrification strategies and plans, based on geospatial least-cost modeling, integrating grid, mini grid and off-grid technologies, with the goal of having countries officially adopt integrated electrification strategies/least cost plans with universal access targets, implementation schedules and modalities and financing plans.

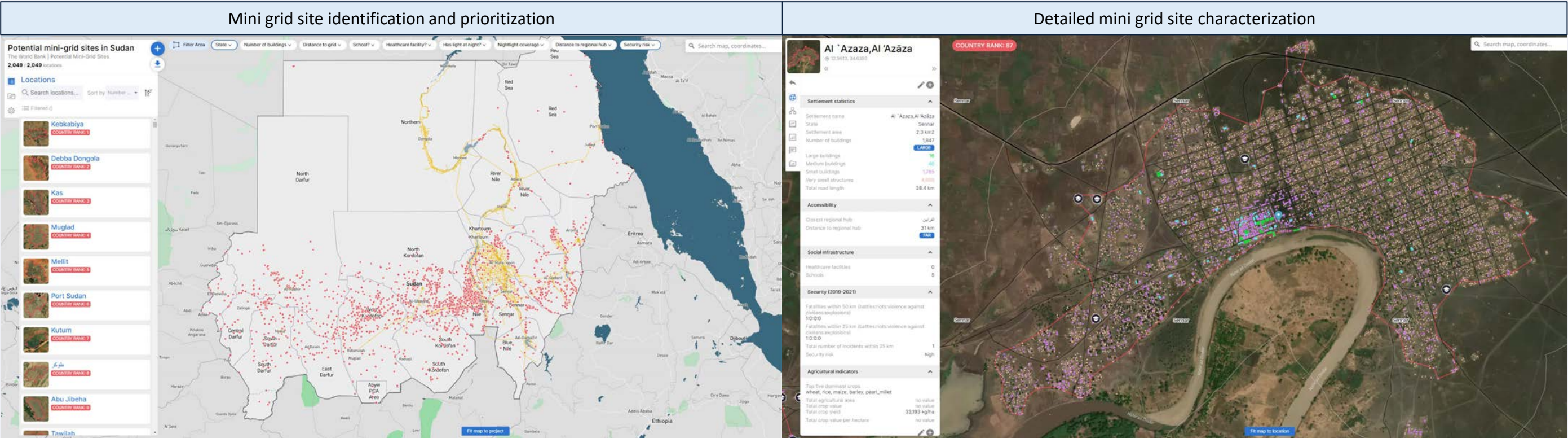
## 5 Pillars

1. Technical assistance and operational support to governments for geospatial electrification planning, pipeline development and implementation, preparation of geospatial-based mini grid investment portfolios.
2. Improving the Global Electrification Platform and expanding its applications.
3. Developing data standards for electrification planning in coordination with key partners.
4. Organizing trainings and convening relevant stakeholders to build capacity of governments, local academia and other stakeholders for geospatial electrification planning.
5. Geospatial analyses for COVID-19 response and to address electrification planning requirements to deal with the next public health crisis.



# Integrated Electrification Strategies & Planning

2023



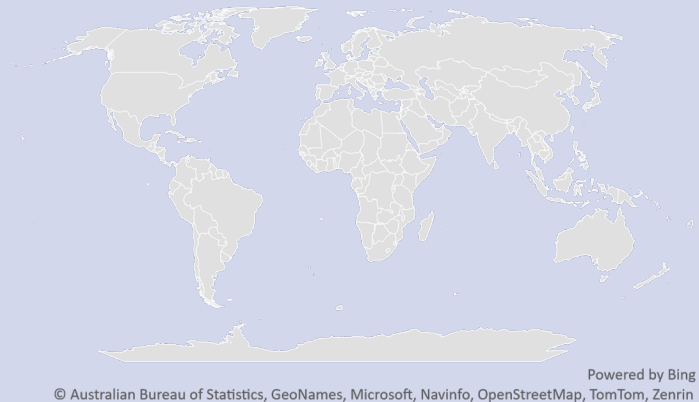
## Analytical Activities/Knowledge Products

- Geospatial planning chapter of the ESMAP *Mini Grids for Half a Billion People* handbook, launched in September 2022.
- Investment needs assessment for the flagship *Energizing health: accelerating electricity access in health-care facilities* report, jointly released by WHO, SEforALL, IRENA and World Bank in Jan 2023.
- Improvements to the electrification planning model and Global Electrification Platform, including the impact of carbon taxes
- Mini grid portfolio planning platform for high electricity access deficit countries to identify, characterize, and rank prospective mini grid sites.
- Enhanced geospatial platform for collaboration between mini grid developers, PUE companies and MFIs

## Capacity Building

- Energy Modelling Platform for Africa training annually, most recently in Namibia, April 2023
- Energy Modelling Platform for Latin America & the Caribbean, Costa Rica, Jan-Feb 2023
- Joint Summer School on Modelling Tools for Sustainable Development annually in Italy, June-July
- Energy Modelling Platform for Asia planned for FY24

## Operational Support

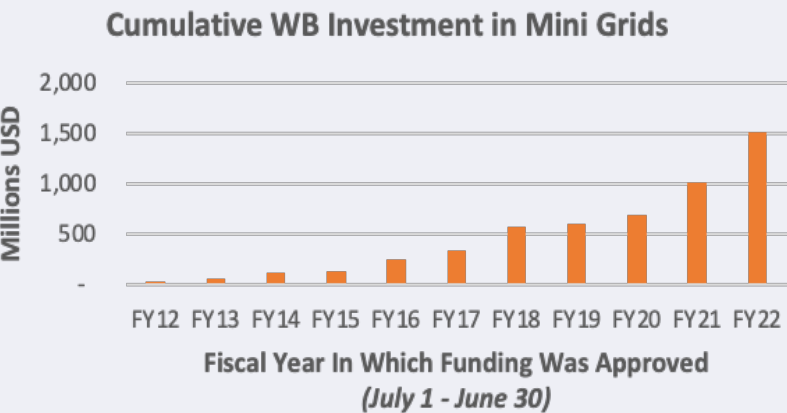


# Global Facility on Mini Grids

2023

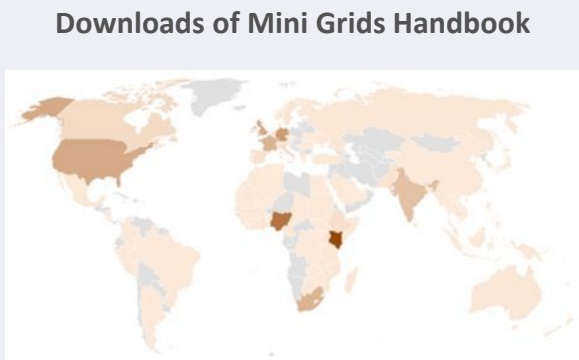
## Pillar 1 Highlights: Project Design & Implementation

- Support to 28 approved projects with mini grid components accounting for >70% of WB’s \$1.5 billion cumulative commitment to mini grids



## Pillar 2 Highlights: Knowledge & Events

- Mini Grids for Half a Billion People* with 7,000 downloads from >100 countries
- 7<sup>th</sup> ALE with 850 participants from >60 countries



Guiding Framework for GFMG Activities: 10 Building Blocks for Mini Grid Development At Scale	Industry Progress ‘18-’23
Planning national strategies and developer portfolios with geospatial analysis and digital platforms	<div></div>
Reducing costs and optimizing design and innovation for solar mini grids	<div></div>
Enacting regulations and policies that empower mini grid companies and customer	<div></div>
Delivering services through local and international companies and utilities	<div></div>
Financing solar mini grid portfolios and end-user appliances	<div></div>
Supporting institutions, delivery models, and champions to create opportunities	<div></div>
Transforming productive livelihoods and improving business viability	<div></div>
Engaging communities as valued customers	<div></div>
Attracting exceptional talent and scaling skills development	<div></div>
Cutting red tape for a dynamic business environment	<div></div>

## Cross-Program Collaboration: Innovations for Energy Access

	Global Facility on Mini Grids
Integrated Electrification Strategies & Planning	Full country scan for mini grid portfolio mapping with high-resolution geospatial analysis. Piloted in 6 countries.
Off-Grid Solar	Support for the deployment of “Mesh grids” – interconnected SHS – in Haiti and Nigeria
Leaving No One Behind	Mini grids for refugee camps – study completed for Sahel region, and implementation support for deployment in CAR
Improving Livelihoods And Human Capital	GIS to inform joint investments by mini grid developers, MFIs, and appliances suppliers in Nigeria and Ethiopia; mini grids for health facility electrification in Nigeria and Haiti
Financial Innovation for Energy Access	RBF via Odyssey Platform mainstreamed in several countries; risk mitigation mechanisms under preparation in collaboration with MIGA



# Off-Grid Solar Scale Up/ Lighting Global

*A Decade of Experience in Energizing Lives – Empowering Markets*



Lighting Global is the World Bank Group's initiative to rapidly increase access to off-grid solar energy for the 789 million people living without electricity world-wide. We work with governments, the private sector, development partners, and end-users, continually innovating to unlock key market barriers and enable access and affordability to those that would otherwise be left behind.

## KEEPING PACE WITH CHANGING TECHNOLOGY



Our primary mission when we piloted our first program in 2009 was to displace harmful lighting like kerosene lamps with clean, affordable, solar lighting.



We developed quality standards to protect consumers, which cover lanterns and solar home systems up to 350W - enough to power several lights and home appliances like TVs, radios, and fans.



We are now also piloting the use of off-grid solar technologies for productive use leveraging solar energy (PULSE) and to power public institutions like schools and health centers



**Conducting and Sharing Market Research**



**Consumer Education**



**Unlock Access to Finance Bottlenecks**



**Quality Assurance Frameworks**



**Sharing of Best Practices**



**Building National Capacity**

# Key Deliverables to Date – Some Highlights

## Market Trends Report Series

*Bi-annual go to report for the sector in cooperation with IFC & GOGLA*

## Global Off-Grid Solar Conference Series

*Bi-annual gathering for the sector in cooperation with IFC & GOGLA*

## Quality Assurance

*Incubation of Quality Standards and VeraSol Certification Platform, in cooperation with CLASP*

## Community of Champions

*peer to peer learning series for policy makers, in cooperation with Power Africa, SEforAll, AECF, GOGLA*

## Energy Access Relief Fund (EARF)

*bridge funding for energy access companies that have come under distress due to Covid-19, in cooperation with 12 partners*

## End User Subsidy Lab

*Solutions lab for real time learning on sustainable subsidy designs, in cooperation with EnDev & GOGLA*

## Knowledge Products

*including paper on best practices in utilizing public funds to catalyze markets, toolkit on regulating PAYG, toolkit on promoting gender equality*

## Powering Public Institutions

*launch of informational series of videos.*

## Informing Lending Operations

*roster of off-grid solar experts embedded into 30+ lending teams*



# Off-Grid Solar Scale Up (Lighting Global) – next FY

## Launch of REACH Partnership:

In collaboration with Acumen, Charm Impact, Power Africa, Get.Invest, and OCA this partnership will seek to create synergies in unlocking accelerated growth in underserved markets. REACH will start its collaboration in an initial set of three focus countries.

## Market Trends Report & Conference Series

2024 Global Off-Grid Solar Conference & Expo, including launch of the Market Trends Report

## Knowledge Products

Toolkit on promoting small and locally owned energy access companies

## Capacity Building

Structured training for policy makers seeking to learn more about how to catalyze energy access markets. Combination of online and in-person training.

## End User Subsidy Lab

Implementation of four pilots in cooperation with EnDev. Guidance and webinar series on design building blocks

## Community of Champions

2x in person meetings. 2x webinars



# Energy Access Innovations: GIS & Matchmaking for PUE

Geospatial analysis and structured matchmaking to catalyze co-investment by mini grid developers, MFIs, and suppliers of appliances and machines to accelerate local economic development and improve mini grid viability.

2023

## Description:

Over the past six months, the GFMG and ILHC teams have been working with VIDA to convene a cohort of some of the biggest MFIs, appliance providers and mini grid developers in Nigeria. After hosting a networking session virtually, ESMAP and VIDA brought the final cohort of stakeholders together for an in-person matchmaking event in Nairobi in March. In one short session, ten early-stage partnerships were formed. Each of these partnerships have the potential to stimulate demand and strengthen the viability of dozens of newly-developed mini grids in Nigeria. The head of the Nigerian Rural Electrification Agency’s (REA) Project Management Unit, Abba Aliyu, called the initiative a “miracle”, and based on the success achieved so far, the REA will be carrying this initiative forward with support from the World Bank and GEAPP. ESMAP is now rolling this out in Ethiopia.

## How It Works:

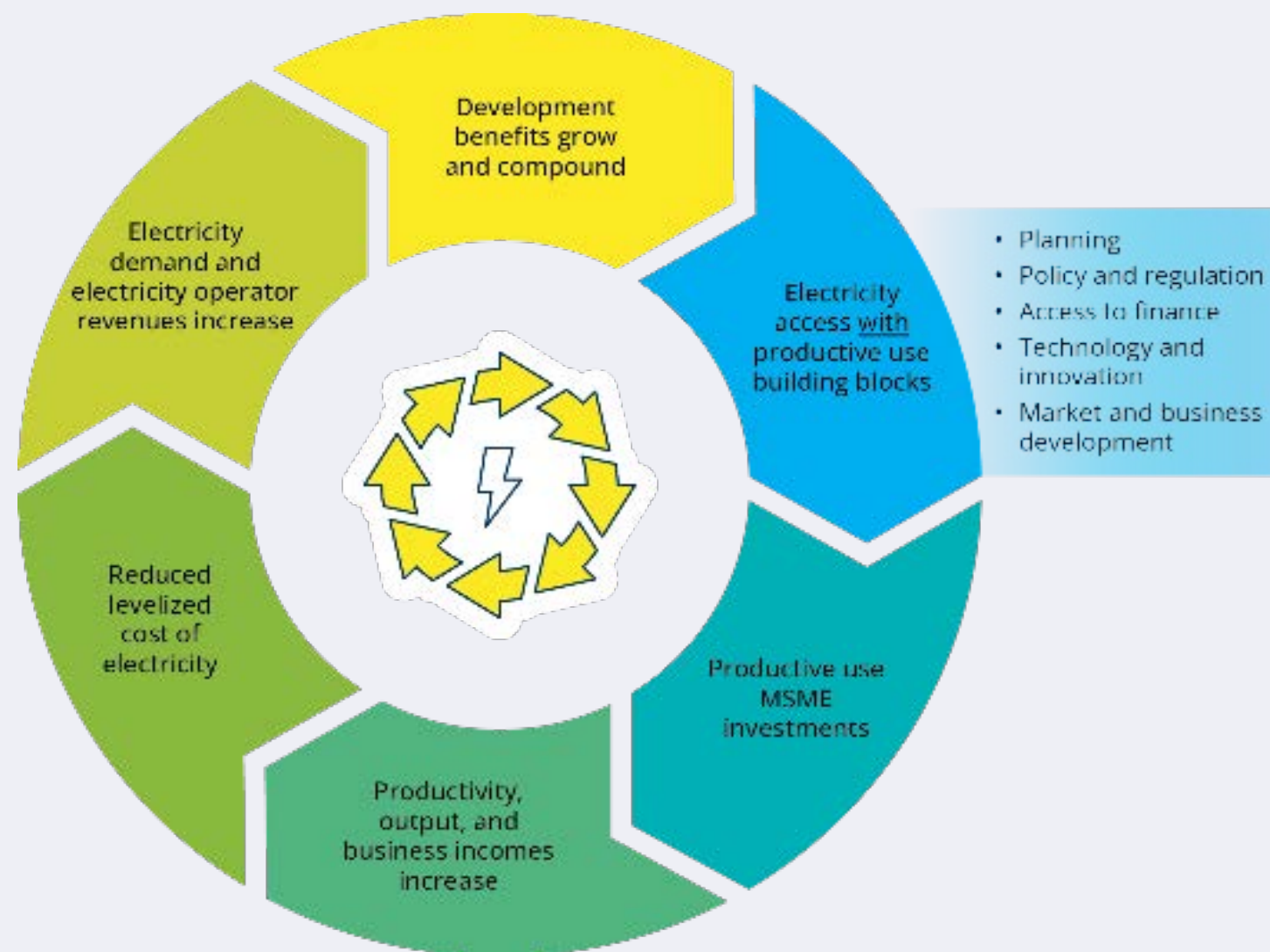




# Improving Livelihoods and Human Capital

An ecosystem approach to mainstream demand-side and PUE activities into operations, create jobs and increase

2023



- 15+ operations mainstreaming PUE
- FY23 Productive Use Toolkit
- Lessons learned (Niger solar irrigation pumps, Indonesia grid PUE stimulation)
- Leverage internal collaboration with Agriculture, Water, FCI and other Global Practices
- International partnerships with FAO, IRENA, EnDev, Rockefeller Foundation



# Improving Livelihoods and Human Capital: Sustainable Electrification of Public Facilities

2023

**Lending projects: 22 active projects** (240,000 public facilities)

**Covid 19 RETFs:** Liberia, Haiti, Mali

**Pipeline:** South Sudan, Madagascar, Mali, Mauritania, Togo, Nigeria, PNG, Sierra Leone, Ethiopia, Kenya

**Knowledge development and advocacy:**

**FY23: WHO-WB-IRENA-SE4ALL Energizing Health**

**FY24: Sustainable Electrification Models of Public Facilities Toolkit**

**Odyssey platform for remote monitoring:** Liberia – 100 health centers, Burundi – 300 health centers & 400 schools

**Capacity building** on sustainable electrification of public facilities

**Collaboration with WHO, SE4ALL, IRENA, UNICEF/Gavi**

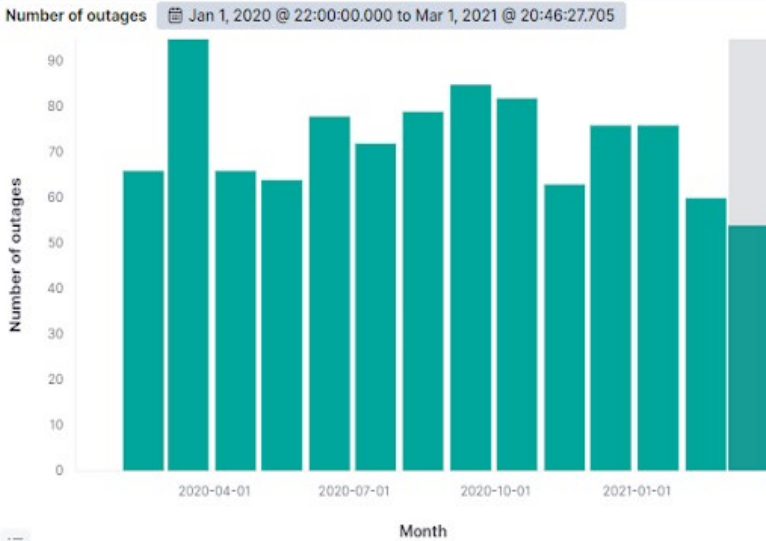
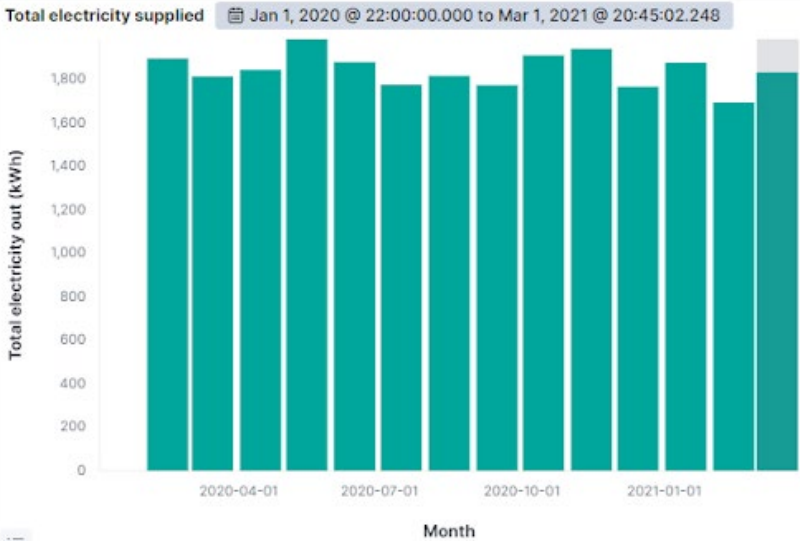
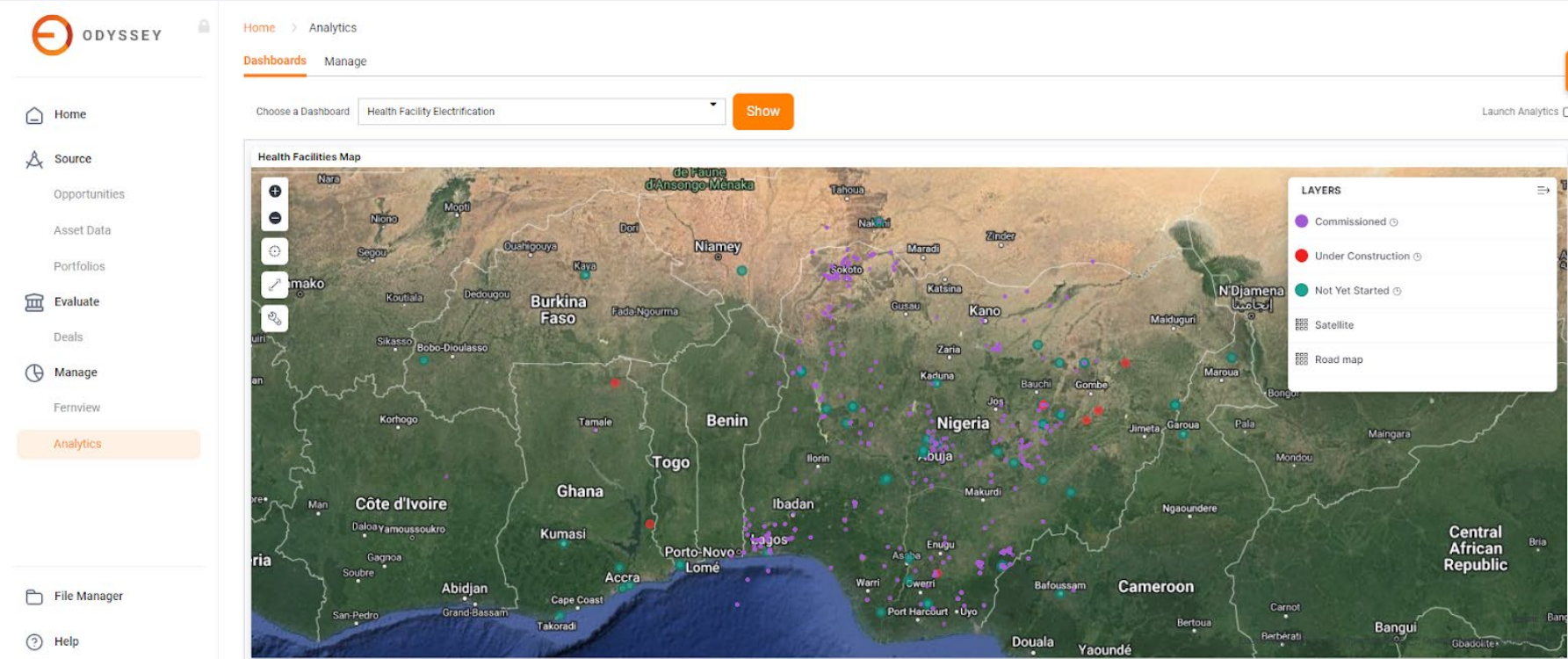




# Improving Livelihoods and Human Capital:

## Odyssey platform for remote performance monitoring of 100 health facilities in Liberia

2023



# Leave No One Behind (1)

2023

**ESMAP's Leaving No one Behind (LNBH) program works towards the provision of safe, reliable, and affordable electricity for host-communities and displaced populations (DPs).**

- **Informing lending projects:** We provide technical and financial support to World Bank operations addressing the electricity access challenges of displaced populations and host-communities, and other vulnerable groups.
- **Collaboration, dialogue and convening:** We inform interventions and the inclusion of these vulnerable population groups in national electrification efforts by leveraging the World Bank's convening power.
- **Data and analytics:** We collect and disseminate data and analytics on displaced people and host-communities In combination with the United Nations High Commissioner for Refugees (UNHCR).
- **Knowledge products:** We prepare and disseminate knowledge products to the international community.
- **Training and education:** We train and educate local personnel on operation and maintenance of electricity access operations to further human capital development.

**DEVELOPMENT CHALLENGE:** Host communities and forcibly displaced persons (FDP) are under intensifying stress. They are no longer solely a humanitarian concern but increasingly a major development challenge.

**The number of FDPs reached a new high at the end of 2020: 82.4 million people.**

Developing countries are disproportionately affected, hosting more than 85 percent of the world's displaced population. These countries and host communities' energy infrastructure have limited resources or capacity to address the challenges of additional demand. The result is often that FDPs and their host communities lack essential day-to-day access to legal, safe, reliable, and affordable electricity. On top of such concerns, the growing number of FDPs poses a serious challenge to achieving by 2030 the SDG7 goal of universal access to electricity.



# Leave No One Behind (2)

2023

## Key country projects portfolio (FY21-23):

Leave No One Behind is currently working on an extensive portfolio to expand energy access in displacement settings. Such portfolio includes interventions in:

- **Ethiopia** (Covid-19 vaccines to IDPs and host communities, electrification of healthcare facilities)
- **Uganda and Ethiopia** (access to electricity in refugee camps and host communities in borderland areas)
- **Sahel and Lake Chad** (access to electricity for refugees and host communities)
- **Horn of Africa** (Electrification of schools, clinics, host-communities, IDPs and refugee households)
- **Bangladesh** (Energy needs of refugees in Cox's Bazaar)
- **Yemen** (improve access to electricity in rural and peri-urban area)
- **Mozambique** (increase access to energy and broadband services in project areas and strengthen the operational performance of the electric utility)

## FY23 knowledge and partnerships:

- **FLAGSHIP: Rethinking Energy Access Programs in Displacement Setting** presented in Geneva at the 2022 High Commissioner Dialogue for Refugees (close collaboration with the WB FCV team / UNHCR).
- **HOMER Enabled Tool to Electrify Displacement Settings** developed and tested at a multi-stakeholders workshop.
- Inclusion in the WBG flagship **World Development Report 2023**, with reference to LNBH: *"Access to safe, affordable, and reliable energy is essential, but it has posed challenges for destination countries and has strained local resources and capacity. It also presents considerable political challenges for host countries."*
- **LiveWire on Energy, Displacement, Gender nexus**

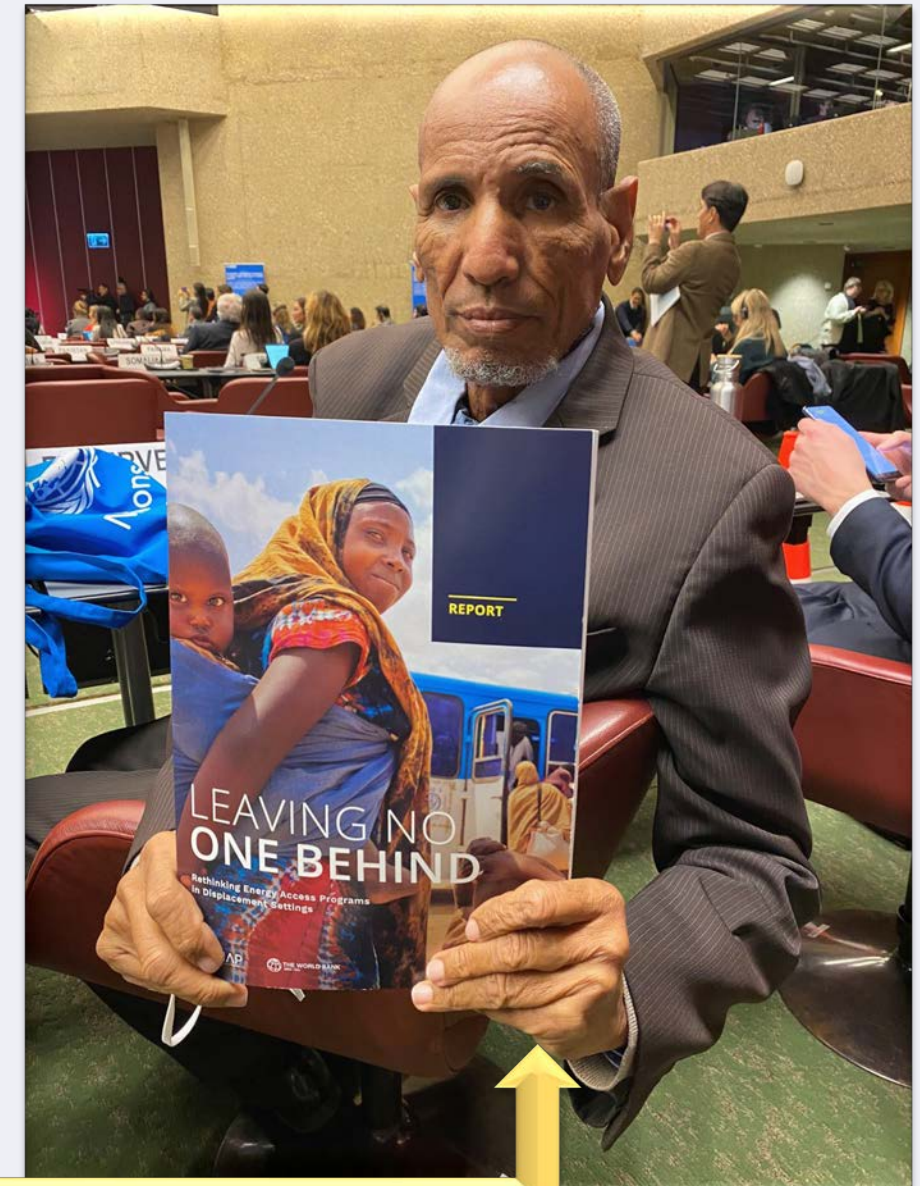
# Leave No One Behind (3)

2023

## Looking forward (FY24):

- **Informing lending projects:** Expand the project portfolio with further technical assistance activities. Pipeline includes South Sudan, Mauritania, Yemen, and more.
- **Expansion and strengthening of partnerships,** i.e., UNHCR, ICRC, UN Peacekeeping
- Knowledge products building on **insights from operational engagements.**
- World Bank Brown Bag Lunches to **disseminate key lessons learned** in the humanitarian energy sector, including reports on energy access for the displaced in the Sahel and Lake Chad regions.
- Representation of the LNBH program and participation in the **2023 High Commissioner Dialogue for Refugees.**

***Refugees like Momo depend on energy to survive!** Momo holding the LNBH report at the 2022 High Commissioner Dialogue for Refugees in Geneva.*





# Financial Innovation for Energy Access

**Objective:** the window supports the testing of financing instruments and implementation modes to drive energy access acceleration, inclusion, and impact across all electricity systems and solutions. It works in a cross-cutting fashion with other ESMAP programs (such as Off-Grid Solar Scaleup, Global Facility on Mini Grids, Utilities for the Energy Transition) to determine ways in which it can help operational projects accelerate access to finance for electrification.

## Knowledge and operational support highlights:

- *Debt Financing for Small and Medium Enterprises in the Off-Grid Solar Sector:* Lessons learned from the Bank designed debt facilities and application of innovative risk mitigation instruments to unlock local debt finance for working capital in off grid solar
- *Innovative Finance for Off-grid energy access in Frontier Markets* reviewed the feasibility of impact linked finance to attract private investments from impact investors in countries where capital flows to the off-grid sector are limited the feasibility of impact bonds for off-grid solar, using the country case studies of Liberia and Burundi
- *Webinar: Electric Bankers: Utility-driven Finance in Sub-Saharan Africa* focusing on innovations around appliance distribution and financing for utility-connected customers.
- Electricity demand assessment and stimulation with utility customers in Kenya and Niger through identification of key customer segments and financing of electric appliances



# Financial Innovation for Energy Access

## KEY PROGRAM PRIORITIES FOR FY24:

### **KNOWLEDGE**

- Second phase of unlocking local debt financing for off-grid solar to include a series of deep dives on various instruments available to Bank operations and how they can best be leveraged to create suitable blended finance packages.
- Digital Payment Systems for Electric Utilities modernization and business model enhancement for improving grid access. Focus is on building the evidence base and designing a support framework for utilities addressing issues such as interoperability for payments, lowering cost of service, increasing revenue, ensuring affordability and other operational efficiencies.

### **EVENTS**

- Unlocking Solar Capital Conference – panel on “Public debt in the off-grid solar sector – lessons learned” with GOGILA and AFDB
- Webinar on implementation approaches of financing facilities – fund managers invited to share their experiences, operational successes, and challenges
- Webinar on exploring the impact that digital payments have for efficiency of utility operations and enhancing access and quality for customers

### **OPERATIONAL SUPPORT**

- *Togo Inclusive Development through Electricity Access (IDEA)* - assistance on operationalizing the Tinga electrification fund including developing best-practice driven management and operational framework; financial targeting impact study on optimizing the use of targeted subsidies
- *Mauritania Energy Transition Acceleration Program (META)* – financial analysis for private sector-driven mini grid and off-grid deployment
- *Yemen Emergency Electricity Access Project – Phase II* - integration of pay-as-you-go models with MFIs distributing solar systems
- *Uganda Energy Access Scaleup Project (EASP)* – results-based finance and debt finance operational support for off-grid solar and clean cooking