WEST AFRICA ENERGY PROGRAM

WEST AFRICA REGIONAL ACTIVITIES (CLIN 0001)

YEAR 2 – FY 21 ANNUAL REPORT

OCTOBER 2020 - SEPTEMBER 2021

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IDIQ Contract No. 720-674-18-D-00003 Power Africa Extension (PAE)

Task Order No. 720-674-19-F-00008 West Africa Energy Program (WAEP)

Task Order Contracting Officer's Representative (CLIN 0001): Rockfeler P. Herisse, Ph.D.

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Cover photo by Power Africa

ACRONYMS

Acronym	Definition
AER	Rural Electrification Agency
AFC	Africa Finance Corporation
AfDB	African Development Bank
ARE	Electricity Regulatory Authority
ARSE	Autorité de Régulation de Secteur d'Electricité
ASER	Agence Sénégalaise d'Electrification Rurale
BOAD	Banque Ouest Africaine de Développement
CEET	Compagnie Energie Electrique du Togo
CIE	Compagnie Ivoirienne d'Electricité
CI-Energies	Côte d'Ivoire Energies
CLIN	Contracting Line Item Numbers
CO	Contracting Officer
COP	Chief of Party
COR	Contracting Officer's Representative
COVID-19	Novel Coronavirus Disease 2019
CRSE	Commission de Régulation du Secteur de l'électricité
CSCE	Civil Society and Community Engagement
DCOP	Deputy Chief of Party
CLSG	Côte d'Ivoire-Liberia-Sierra Leone-Guinée
CSO	Civil Society Organisation
DtP	Desert to Power
DGE	Directeur Générale de l'Énergie
DGRE	Direction Générale des Ressources Énergétiques
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Centre for Renewable Energy & Energy Efficiency
EDG	Electricité de Guinée
EMMP	Environmental Mitigation and Monitoring Plan
ENEO	Energy of Cameroon
EPC	Electricity Production Company
ER	Expected Results
ERERA	ECOWAS Regional Electricity Regulatory Authority
ERP	Enterprise Resource Planning
ESIA	Environmental and Social Impact Assessment

FinTech	Financial Technology
FMO	Entrepreneurial Development Bank
FY	Fiscal Year
GIS	Geographic Information System
GOG	Government of Guinea
GOL	Government of Liberia
GW	Giga Watts
IDIQ	Indefinite Delivery, Indefinite Quantity
IRRP	Integrated Resource and Resilience Plan
IPP	Independent Power Producer
JDA	Joint Development Agreement
KM	Kilometer
LEC	Liberia Electricity Corporation
LoE	Level of Effort
MCC	Millennium Challenge Corporation
MEL	Monitoring, Evaluation, and Learning
MOE	Ministry of Energy
MOF	Ministry of Finance
MOMG	Ministry of Mines and Geology
MOU	Memorandum of Understanding
MW	Megawatt
NDA	Non-Disclosure Agreement
NAST	Needs Assessment Survey Tool
O&M	Operations and Management
OCAT	Organizational Capacity Assessment Tool
OC	Outcome
OMVG	Gambia River Basin Development Organization
PA	Power Africa
PAAG	Guinea Electricity Access Scale Up Project
PACO	Power Africa Coordinator's Office
PATT	Power Africa Tracking Tool / Power Africa Transaction Tracker
PEDECEL	Projet d'Electrification et de Développement des Connexions à l'Électricité
PEPT	Programme Électricité Pour Tous (Electricity for All Program)
PIDG	Private Infrastructure Development Group
PIM	Project Information Memorandum
PIM	Project implementation Manual

PMU	Project Management Unit
PNAAEMC	Programme National d'Accès À l'Électrification à Moindre Coût
POC	Point of Contact
PPA	Power Purchase Agreement
PSC	Production Sharing Contract
PURA	Public Utilities Regulatory Authority
PPP	Public Private Partnership
PV	Photovoltaic
Q	Quarter
QTAT	Qualified Transactions Assistance Tool
rAREH	responsAbility Renewable Energy Holdings
RFI	Request for Information
SAEP	Southern Africa Energy Program
SENELEC	Senegal National Electricity Agency
SE4ALL	Sustainable Energy for All
SEFA	Sustainable Energy Fund for Africa
SGA	Senior Gender Advisor
SNE	Société Nationale d'Electricité
SODEN	Société des Energies Nouvelles
SONABEL	Société Nationale d'Electricité du Burkina Faso
SOW	Statement of Work
SRTL	Senior Regional Technical Lead
STEM	Science, Technology, Engineering, and Mathematics
STTA	Short Term Technical Advisor
TAS	Transaction Advisory Services
TBI	Tony Blair Institute
TO	Task Order
TOCOR	Task Order Contracting Officer's Representative
TRANSCO CLSG	Transmission Company Côte d'Ivoire, Liberia, Sierra Leone and Guinée
TSA	Transmission Services Agreement
TWh	Terawatt Hour
US$	United States Dollar
USAID	United States Agency for International Development
USG	United States Government
USTDA	United States Trade and Development Agency
WAEP	West Africa Energy Program

WAPP	West African Power Pool
WFH	Work-From-Home
WiAP	Women in African Power
YALI	Young African Leaders Initiative

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PROGRESS TOWARD LIFE-OF-PROGRAM TARGETS

Project Name	West Africa Energy Program CLIN 1 (WAEP Regional)
Performance Period	July 15, 2019, to July 14, 2023
TEC	$54,581,750
Countries	Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, São Tomé and Príncipe, Senegal, Sierra Leone and Togo.
Implementing Partner	Deloitte Consulting LLP
Subcontractors	CrossBoundary, Deloitte Côte d'Ivoire, Deloitte Ghana, EnerNex, NRECA
Performance Reporting Frequency	Quarterly
Date of Latest PMP Modification	December 15, 2020
Contacts	COP: Adaku Ufere
	COR: Rockfeler Herisse; A/COR: Michael Oppong-Adjei

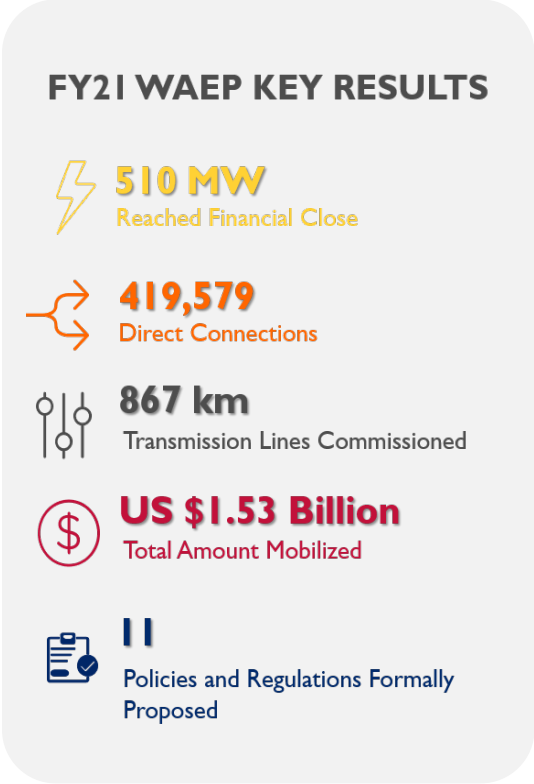
WAEP RESULTS AS OF: 30 September 2021

Project Goals	LOP Target	Progress to Date (as of 09/30/2021)	% Achieved	Next Quarter Targets
Number of new grid and off-grid actual direct connections (PA #3)	3.5 million	419,579	12%	215,750
Number of MW from transactions that achieved financial close (PA #8)	8,000 MW	765 MW	9.6%	220 MW
Amount of investment mobilized for energy investment (PA #14)	N/A	$1.657 B	-	TBD
Kilometers of Power Lines Constructed or Rehabilitated (PA #19)	3,800 kms	867	23%	472
Number of laws, policies, regulations or standards to enhance energy sector governance formally proposed, adopted or implemented (PA #23)	35	12	34%	2

Wholesale cost of generation reduced by 20% in at least three countries, disaggregated by country and normalized by international fuel price	3 countries	0	0%	0
Master plans pertaining to generation and transmission, and/or integrated resource plans completed for seven countries	7 countries	2	29%	0
Women in energy sector leadership roles (PA #24)	20	2	10%	0
PROJECTED TARGETS NEXT PERFORMANCE PERIOD (Annual - FY 22): #New Connections: 863,000; #MWs at Financial Close: 1711 MW; Investment Mobilized $: TBD. #KM of T&D Lines Constructed or Rehab'd: 2272 km; # New Laws, Policies and Regulations: 5; # Generation cost reduction Countries baseline results: Reduced by 20%, one country; # Master Plan Countries: 2; # Women in Leadership Roles: 0				

EXECUTIVE SUMMARY

Year 2 of the United States Agency for International Development (USAID) funded Power Africa West Africa Energy Program ("WAEP" or "the Program") was a period of expanding program implementation across the region. The WAEP team supported almost every MW, connection, and kilometer achieved in the West Africa region, and worked to unlock the energy sector's potential across the region by strengthening the enabling environment.



From October 1, 2020, to September 30, 2021, [USAID Fiscal Year 2021 (FY21)], the WAEP team advanced a host of activities contributing to Power Africa's regional goals of creating a brighter, more sustainable future for many across West Africa. It continued its technical support to improve regulatory effectiveness, operations, sector governance of national utilities and electricity regulation agencies across the region. While accomplishing these, the WAEP team kept a sharp focus on ensuring that program activities supported multiple countries in charting their paths through energy transition, climate resilience, gender inclusiveness to energy access, transmissions and regulatory effectiveness. This Year 2 Annual Report ("the Report") details the Program's implementation progress for the past year; from accelerating power generation projects to supporting strategic transmission projects and increasing energy access through electrification programs.

Over the 12-month period covered in the Report, the Program realized the following key milestones in its Year 2 program delivery across the region. The WAEP team:

- Achieved **419,579 direct connections, exceeding** the Program's **Year 2 target** of 390,000 connections, through **electrification efforts across Benin, Côte d'Ivoire, Liberia, Senegal and the Transco CLSG transmission line.** This was as a result of the WAEP team's focus on supporting utilities and ministries to plan, finance, and effectively realize increased on-grid connections.
- Supported **510 MW** in generation projects that reached **Financial Close** in Year 2, including assisting CI-ENERGIES in Côte d'Ivoire to meet first disbursement conditions for 390 MW from the CIPREL V power project and the Malicounda project in Senegal to meet120 MW.
- **Accelerated the transition to clean energy** in West Africa, by supporting the Government of Senegal and AfDB to de-risk and commission the **120 MW Malicounda** combined cycle power plant, which produces higher output at higher efficiencies and with lower emissions, than the older open cycle plants in operation.
- Strengthened its partnership engagement with various counterparts across the region. The WAEP team also entered into a strategic partnership with the **African Development Bank (AfDB) and the Tony Blair Institute on the Desert to Power Initiative** (DtP). This initiative will connect 250 million people with electricity, generate up to 10GW of solar generation capacity, and make the Sahel, the world's largest solar production zone. Power Africa is engaged in that

activity in **Burkina Faso, Chad**, **Mali, Mauritania** and **Niger**, via a team spread out across West Africa, as well as an Embedded Representative, stationed within the AfDB itself.

- As part of our DtP focused activities, the WAEP team assisted the Government of Chad in unlocking a **US $21 million** loan for the **32 MW Djermaya Solar PV plant** and supporting an additional **8 MW-equivalent in battery storage,** for grid stability. The team also provided assistance in securing a **US $150 million** loan from the Green Climate Fund, contributing to the development of **500 MWs of additional solar capacity** and **239 MWh** of storage capacity over the next seven years.

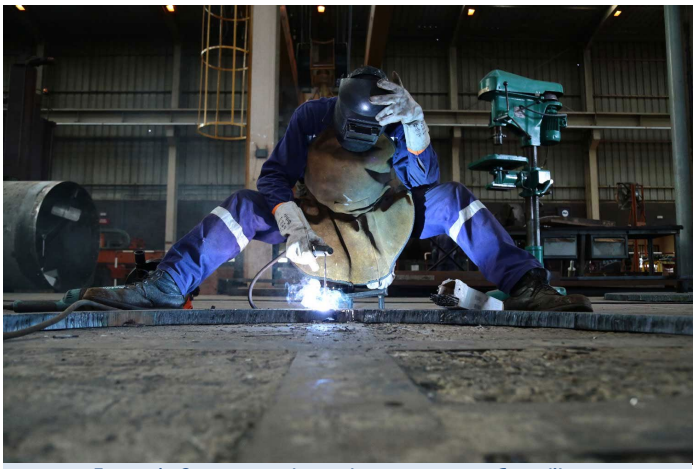
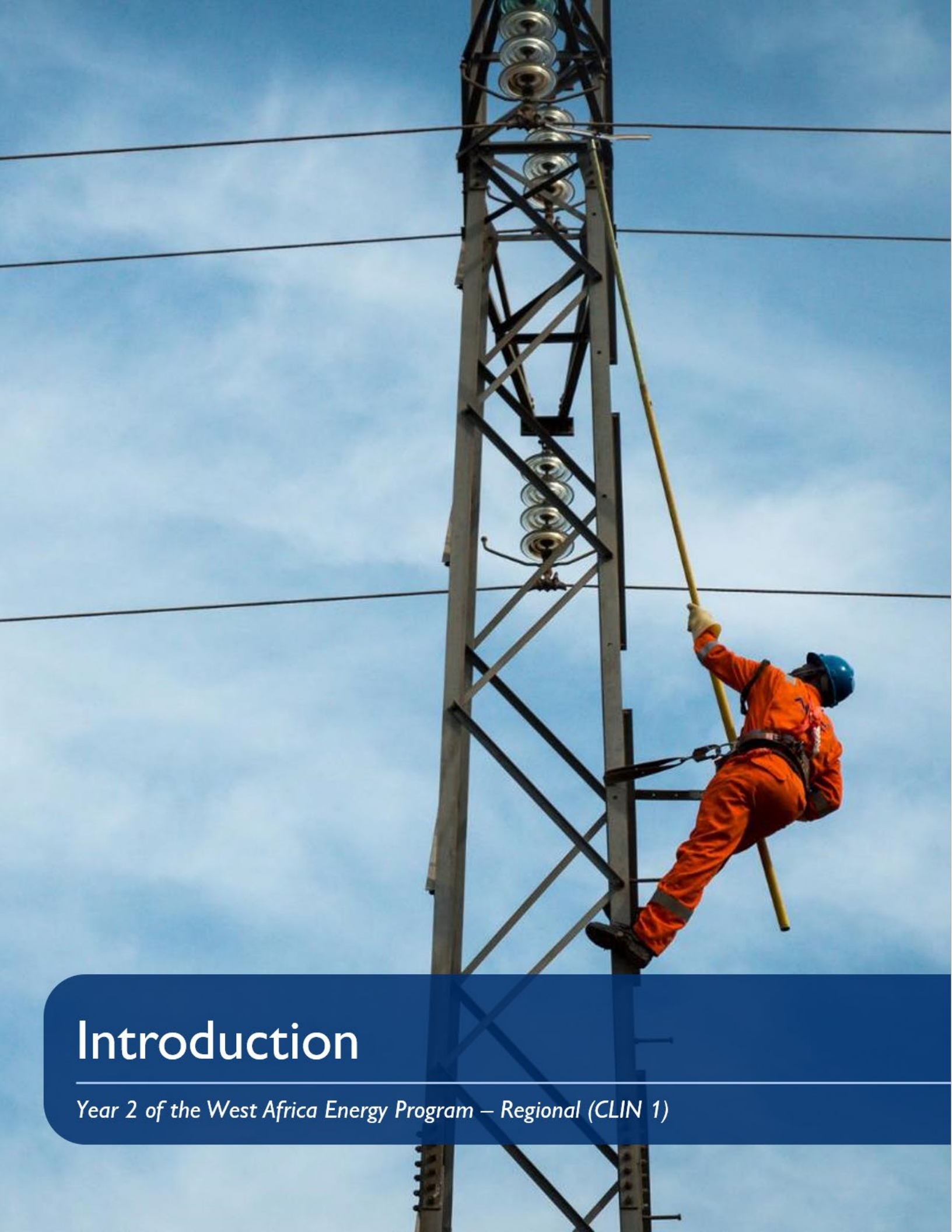


Figure 1: Ongoing work in a business unit in Cote d'Ivoire
Photo Credit: PAWAEP

- Accelerated **867km of transmission lines** across the Mano River Basin via the support to the TRANSCO CLSG, the Transmission System Operator of the line within the framework of CLSG project.
- Completed a state-of-the-art training on competitive procurement, Power Purchase Agreements (PPAs) and related agreements to facilitate the development of a competitive energy generation market, other regulatory agencies and PPP institutions in West Africa.
- Delivered **six webinars** for over **400 participants** from African power utilities to navigate the impacts of COVID-19 on the power sector and two in person trainings on Geographic Information Systems (GIS) management in Guinea and Sierra Leone. The WAEP team also built the capacity of **20 Civil Society Organizations** (CSOs) to advocate for cost reflective tariffs in Cote 'Ivoire.
- Produced nine monthly features via social media networks of the personal and professional journeys of successful women in the energy sector to inspire more women to join/stay within the energy sector.
- Supported **two women to transition into energy sector leadership,** via capacity building, during their participation in the YALI - Power Africa Young Women in African Power Program.

Throughout the program implementation in Year 2, the WAEP team engaged with high level stakeholders in-country, particularly, the various ministries of energy. Further, the Program continued to deploy advisory services and resident representatives to support program partners. These steps were quite impactful in the program delivery as it increased trust with stakeholders and enhanced the level of responsiveness at all levels. A key challenge the Program experienced among others was the regime change in Guinea for which reason the Program has halted direct support to Guinea.

In the midst of COVID-19 and other variants of the virus, the WAEP team continued teleworking alongside in-person engagements where necessary. The webinar style approach to capacity building and training proved relevant to the program as activities targeted at individual countries could now be expanded to the region. Intermittent in-person engagements among staff and with stakeholders reduced the length of time it usually took to engage with program counterparts.



Introduction

Year 2 of the West Africa Energy Program – Regional (CLIN 1)

1. INTRODUCTION

1.1 PROGRAM OVERVIEW

The United States Agency for International Development (USAID) funded Power Africa West Africa Energy Program ("WAEP" or "the Program") advanced its objective of expanding supply of and access to affordable and reliable grid-connected electricity services in West Africa. The Program has the ultimate goal of advancing development priorities, including inclusive economic growth, increased security, and improved health and education. Progress toward this goal is outlined in the Power Africa Roadmap, which functions as the master plan that describes how Power Africa and its partners will fulfill its objectives.

The Program comprises two components delineated by two Contracting Line-Item Numbers (CLINs) respectively for the **West Africa Region** (CLIN 0001) and **Ghana** (CLIN 0002). The Program will collectively provide a range of technical assistance, capacity building, and transaction support to advance Power Africa's objectives in the West Africa region.

WAEP's contract scope in West Africa seeks to increase electricity availability and access in the region while objectively quantifying and measuring progress towards four key Outcomes as follows:

1. Increased Supply of Power
2. Access to Reliable and Affordable Grid-Based Power Increased
3. Performance of National Utilities and Power Sector Entities Improved
4. Establishment of a High-Functioning Regional Power Market Accelerated

POWER AFRICA
A U.S. GOVERNMENT-LED PARTNERSHIP

Power Africa is a U.S. Government-led partnership that brings together the collective resources of over 170 public and private sector partners to double access to electricity in sub-Saharan Africa.

Power Africa's goal is to add more than 30,000 megawatts (MW) of new electricity generation capacity and connect 60 million new homes and businesses to power by 2030.

To date, Power Africa has helped bring 124 power generation deals to financial close with a generation capacity of over 11,000 MW and a total project value of over $22 billion. Of these deals, 46 are operational and generating nearly 4,000 MW of new and more reliable electricity.

Since 2013, Power Africa-supported projects have added more than 11,000 megawatts (MW) of cleaner and more reliable electricity and more than 18 million new power connections for homes and businesses.

Figure 2: A section of the WAEP team in Accra in a group picture. Photo Credit: @PAWAEP, 2021

The WAEP team is working to achieve these Outcomes (OCs) by strategically aligning energy reform and electrification goals, with new investment opportunities. This will include working to bring transactions to financial close, coordinating with the private sector, prioritizing the most viable projects, and building human and institutional capacity within targeted priority utilities, government and regional institutions. Over the course of the Program's four years of implementation, the WAEP team will increase electricity availability and access in West Africa while objectively quantifying and measuring progress against the four key Outcomes through these corresponding expected results (ERs):

This report reflects the Program's activities in the West Africa Region per the CLIN 1 outcome areas.

OUTCOME 1 – Increased Supply of Power

- 8,000 megawatts (MW) of new generation capacity reach financial close
- 3,800 kilometers (km) of new transmission lines commissioned
- Wholesale cost of generation reduced by 20 percent in at least three countries, disaggregated by country, and normalized by international fuel price
- Master plans pertaining to generation and transmission, and/or Integrated Resource Plans (IRPs) completed for seven countries

OUTCOME 2 – Access to Reliable and Affordable Grid-Based Power Increased

- 3.5 million on-grid connections (including new and regularized)
- Reduced average cost to the utility (or other entity as appropriate) per connection in at least two countries
- Reduced upfront cost of connection for end-users in at least two countries
- Reduced average time required to get a household connection in at least three countries

OUTCOME 3 – Performance of National Utilities and Power Sector Entities Improved

- Aggregate technical and commercial distribution losses reduced in at least three utilities
- Cost recovery improved in at least two utilities
- Technical performance improved (in terms of reduced frequency and duration of outages) in at least two utilities
- Capacity of utilities and regulators to independently develop, advocate for, and approve cost reflective tariff rates improved

OUTCOME 4 – Launch of a Regional Power Market Accelerated

- Six high priority regional transmission projects reach operation
- West African Power Pool (WAPP) Information and Coordination Center (ICC) operationalized
- Five control area centers operationalized
- Increased number of utilities engaged in regional trade
- At least 3.5 Terawatt hours ("TWh") of additional cross border power traded annually

Major Activities

During the Reporting Period

2. YEAR 2 KEY ACTIVITIES

In Year 2, the Program's delivery covered 23 of WAEP's regional focus countries with major activity implementation in 14 countries.[2] Across the region, the Program collaborated with national ministries, utilities, transmission and distribution companies, regulators and the private sector. Figure 3 gives an overview of major Year 2 activity highlights by country.

***Figure 3:* Overview of some of WAEP's Major Activities in West Africa**

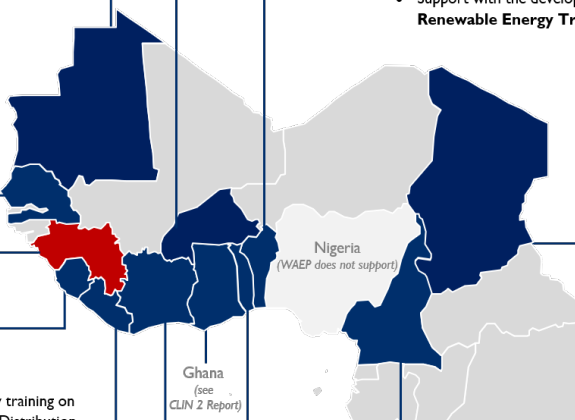
Regional:
- Supported Transco CLSG to implement a finance technology system and develop a transition strategy
- Assisted OMVG to align its operational principles with the WAPP Grid Code.
- Supported 23,000 connections facilitated through support to CLSG line and Bo-Kenema line extending from CLSG.
- Mobilized $150 million dollars from the Green Climate Fund (GCF) for the Desert to Power facility
- Validated 11 Needs Assessment Reports across the Region

Mauritania:
- Assisting Kosmos Energy in designing a gas master plan which has the potential to roll out a 500 MW gas to power plant for gas markets in Mauritania and Senegal

Burkina Faso:
- Mobilized US $71.8 million (equivalent of €59 million) for the implementation of PEDECEL

Benin
- Contributed to **36,460 Connections**
- Support with the development of a **Renewable Energy Transition Plan**

Senegal:
- Mobilized US $173 million to bring the Malicounda 120MW power plant to financial close
- Supporting SENELEC to improve its energy demand forecasting techniques
- Contributed to 32,736 connections
- Built capacity of 20 CSOs to advocate for Cost Reflective Tariffs



Country Color Code:
- Major activities in Y2
- No major activities in Y2
- Not WAEP supported
- Implementation halted

Chad
- Unlocked US $21 million for the Djermaya project
- Reviewed 9 documents for the operationalization of ARSE

Guinea:
- Provided TA to Guinean Ministry of Energy towards the completion of its Master Plan for the Power Sector in Guinea.

Sierra Leone:
- Conducted a 2-day training on GIS for Electricity Distribution and Supply Authority (EDSA)
- Technical Assistance (TA) for Tobene 115 MW
- TA for Milele in Sierra Leone 85MW

Liberia:
- Contributed to 38,020 new connections to the grid
- Continuous support to LEC to improve loss reduction and regulatory processes

Togo:
- Supporting Compagnie Energie Electrique du Togo (CEET) and Directeur Général de l'Énergie (DGE) to advance collaboration in the area of connections

Cameroon
- Commenced support for the development of 30MW Solar Power Project in Ngaoundéré and the 72MW in Mbalmayo

Cote d'Ivoire:
- Assisted CI-Energies to mobilize US $717.16 million to bring the 390MW Ciprel V to financial close
- Contributed to 289,000 connections to the grid
- Facilitated the DigiSilent training for CI-Energies

COVID-19
- Delivered COVID-19 webinar series to help utilities
- Conducted impact business assessment and COVID-19 impact analysis for Liberia Electricity Company
- Led SENELEC to improve its energy demand forecasting techniques

[1] Soubré Hydroelectric Dam in Côte d'Ivoire. Photo: PA WAEP

[2] Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Cote d'Ivoire, Gambia, Guinea, Liberia, Mauritania, Niger, Senegal, Sierra Leone, and Togo

2.1 COVID-19 ACTIVITIES

2.1.1. TECHNICAL OVERVIEW

In response to the COVID-19 pandemic, the WAEP team developed the COVID-19 Redirection Proposal, to support counterparts in the regional energy sector as they absorb impacts of the pandemic, adapt to the new normal, and transform operations and programming to increase resilience in a post-COVID-19 world. The COVID-19 Redirection Activities, initiated in Q4 of Year 1, extended into the first two quarters of Year 2. Areas of support included: (i) COVID-19 business impact assessments, (ii) support for developing or renewing business continuity plans; and (iii) technical assistance to increase financial stability and resiliency of utilities. During this reporting period, the WAEP team concluded its COVID-19 Redirect support activities and submitted a close out report detailing the status of specific activities to USAID at the end of the second quarter.

HIGHLIGHTS

Webinar Series Focused on COVID-19 to Support Utilities in the Region: The WAEP team and the African Power Utilities Association (APUA) sustained their productive working relationship and continued to help utilities in West and Central Africa navigate COVID-19 related challenges. The teams partnered to deliver a series of six webinars that provided capacity building and knowledge-sharing platforms for utilities to exchange experiences and leading practices. The highly interactive webinar sessions featured distinguished speakers from across the energy sector including WAEP counterparts and about 100 participants, over 20 percent of whom were women,, representing more than 16 utilities and power sector training institutions across the African continent.

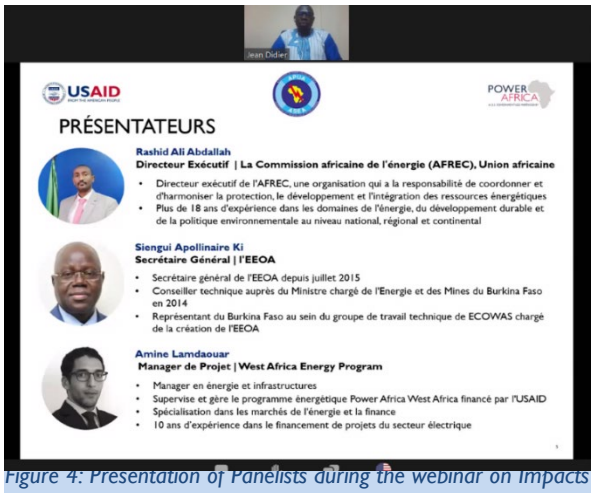
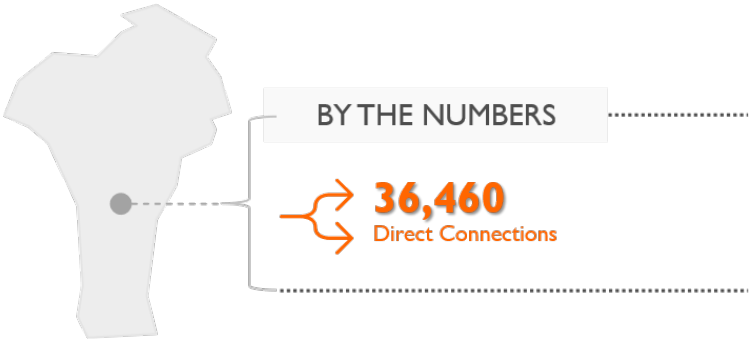


Figure 4: Presentation of Panelists during the webinar on Impacts of COVID-19 on the Power sector in West Africa.

Liberia Electricity Company (LEC) COVID 19 Impact Assessment and Business Plan: In Q1 of Year 2, while the impact of the COVID-19 pandemic was still lingering, the WAEP team supported LEC to develop a COVID 19 impact analysis report, to better understand and build LEC's capacity to apply short-term adaptations to the planning and continuity of its operations. The COVID-19 Impact Analysis Report along with the business continuity plan, which the WAEP team supported LEC in developing, has been useful to LEC's operations and its ability to meet its annual key performance indicators.

2.2. COUNTRY LEVEL ACTIVITIES

2.2.1. BENIN



Benin produces only a portion of the electricity it consumes. With an urban electrification rate of 73% and a rural electrification rate of 17%, it plans to increase urban electrification access to 95% and rural electrification access to 65% by 2025. Amidst of financial challenges to meet the supply issues in Benin, the Millennium Challenge Corporation (MCC) Compact in Benin is actively supporting an off-grid electrification masterplan and tariff reform. Benin presents a strong opportunity for performance improvement based on progress in sector reform efforts, movement towards cost-reflective tariffs, advancement of on-grid access and receptive sector stakeholders. Below are some of the Program's highlights in Benin during Year 2.

OUTCOME HIGHLIGHTS

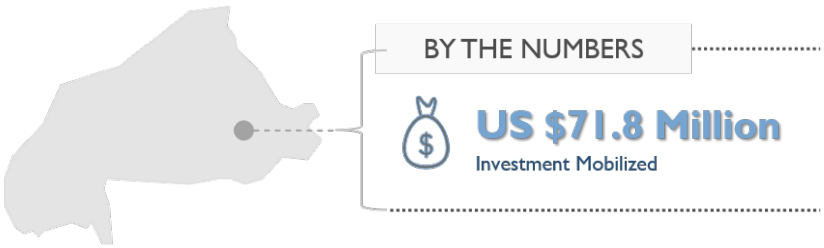
Outcome 1

Positive Progress in Energy Transition Strategy Assistance to the Government of Benin: The WAEP team supported the Government of Benin to develop its **renewable energy transition strategy**, proposing recommendations that could potentially inform West African Power Pool (WAPP)'s integration of new projects into the energy projects currently coordinated by WAPP. The strategy takes into account the broader gas market in the region (current production and new development) and how these market dynamics will impact WAPP.

Outcome 2

Electrification Assistance to The Ministry of Energy (MOE) Yields 36,460 Connections: WAEP's high-level advisory technical assistance to the Ministry of Energy in Benin contributed to the validation of Benin's National Electrification Strategy (SNE) and Benin's National Electrification Plan that will inform over 500,000 connections through 2030. In collaboration with the 'Direction Générale des Ressources Energétiques' (DGRE) project, the WAEP team developed an analysis of the Ministry's constraints in managing infrastructure projects and areas to improve on for the effective management of the national power sector. On this premise, they outlined a plan to establish a coordination unit within the Ministry to oversee all activities in Benin's power sector, including distribution and electrification activities. The WAEP team's contribution to its Beninese counterparts resulted in **36,460 connections** this year**.** The WAEP team's support to the Ministry of Energy is targeted at **potentially supporting 250,000 connections through the life of the Program.**

2.2.2. BURKINA FASO



Burkina Faso maintains some of the highest electricity costs in the region, with cost of production at 0.22-0.25 USD/kWh. Years of electricity production based solely on fuel oil has impoverished the national electricity company, Société Nationale d'Electricité du Burkina Faso (SONABEL), rendering it incapable of acting as a financial counterparty/credit-worthy off-taker for power purchase transactions. The Government, with the support of independent electricity producers, aims to build a pipeline of 155MW. To successfully increase the electrification rate in Burkina Faso, the WAEP team identified a need for institutional and technical capacity building to facilitate on-time completion, and to create the enabling environment for credible power trading. The Program's activity highlights in Year 2 in Burkina Faso include the following:

OUTCOME HIGHLIGHTS

Outcome 1

Collaboration with the Tony Blair Institute to Provide Fuel Strategy Advice for Higher Penetration of Renewable Energy: To improve SONABEL's capacity to integrate electricity from solar PV plants into the grid and to help reduce the wholesale cost of generation in the country, the WAEP team and the Tony Blair Institute engaged SONABEL to prepare technical support for the inclusion of Small Scale Liquefied Natural Gas (LNG) into the grid.

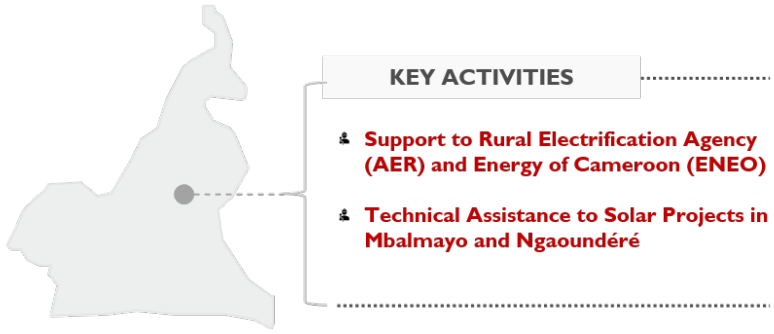
The WAEP team, as part of its advisory support on gas supply in the country, conducted a gas market assessment, to provide recommendations to SONABEL on identifying potential off takers for liquified natural gas in Burkina Faso and the best transport and utilization of gas available from neighboring sources. Ultimately, the support to SONABEL will help improve its grid stability considering the significant number of solar PV plants expected on the grid in the future.

Outcome 2

Mobilized $71.8 million from AfDB to Facilitate 218,400 Connections as part of 'Projet d'Électrification et de Développement des Connexions à l'Électricité (PEDECEL): the WAEP team supported the **the design of PEDECEL**, a project which seeks to expand electricity access to 218,400 households in peri-urban and rural areas in 10 administrative regions of Burkina Faso and enhance the capacity of SONABEL. The team supported efforts to finalize **a financing package of** US **$71.8 million (equivalent of 59 million euros)** that the AfDB Board approved to directly realize the connections. The Program's technical support helped to expedite the completion and approval of the funding package by the AfDB Board.

The WAEP team also organized its first tranche of support under PEDECEL, focused on mapping SONABEL's connections in Geographic Information System (GIS). This strengthens SONABEL's ability to track new connections and increase the sustainability of all future connections through this GIS platform. The WAEP team continues to provide technical assistance and capacity building to the PEDECEL project management unit throughout project implementation.

2.2.3. CAMEROON



Cameroon has an urban electrification rate of 93% and a rural electrification rate of 21%. In 2017, the government adopted a Rural Electrification Master Plan (REMP) to connect one million households by 2030 of which 80% will be achieved through grid extension. Although there are indications of moderate to high potential for pipeline development, SONATREL remains relatively new. To facilitate the interconnection of Cameroon's three isolated grids and strengthen interconnection with neighboring countries, the WAEP team provided support in transaction advisory services, master planning, transmission planning, and with geospatial planning and low-cost connections, to ultimately increase access to electricity in Cameroon. Additionally, the relative financial weakness of ENEO has been a significant challenge to independent power projects. The WAEP team has provided technical assistance to ENEO to help address this issue during Power Purchase Agreement (PPA) negotiations. The following represents some of the Program highlights in FY 21.

OUTCOME HIGHLIGHTS

Outcome 1

Transaction Advisory Assistance for the Development of the Ngaoundéré 30MW Solar Power Project: The WAEP team commenced support to project sponsors of the Ngaoundéré 30MW Solar PV, namely Générale du Solaire (GDS) and Orion Solaire**, towards the development of a 30 MWp solar power project with a 20MWh storage option.** The WAEP team assisted the sponsors with: (a) sourcing project development capital, (b) debt fundraising and (c) performing a bankability gap analysis on the project Environmental and Social Impact Assessment (ESIA) documents. The sponsors have adopted the majority of the WAEP recommendations on the financial model which has helped strengthen the project's engagement with key debt providers such as the Islamic Development Bank, Proparco and Entrepreneurial Development Bank (FMO).

Technical Assistance to the 72 MW Solar Project in Mbalmayo: The WAEP team is providing technical assistance to JCM Capital to help JCM negotiate the PPA and strengthen the bankability of the Mbalmayo 72 MW solar project, through a credit risk mitigation structure enhancement. In Year 2, the team supported the sponsor with the mobilization of funding for the electrification project. Project progress has slowed as JCM is negotiating the sale of their development rights to another sponsor. WAEP continues to monitor the project but has shifted Level of Effort (LoE) to other projects in the portfolio which are advancing to financial close.

Outcome 2

Joint Technical Supervision Support to Rural Electrification Agency (AER) and Energy of Cameroon (ENEO) to Yield 200,000 Connections: In Year 2, the WAEP team continued to expand its geographic reach to support connections by initiating engagement with the Rural Electrification Agency (AER) in Cameroon to provide technical assistance on scaling up grid access. The specific areas the WAEP team identified and will focus on in year 3 include (i) technical supervision and quality control on rural electrification infrastructure construction and, (ii) network extension planning. It is anticipated that this joint support to AER and ENEO in network planning and improving technical connection standards in the field will begin in Year 3 and **yield 200,000 connections within the next two years**.

2.2.4. CHAD

Since 2003, Chad's economy has shifted to become reliant on oil. Most of Chad's existing capacity comes from diesel, natural gas, and heavy fuel oil generation. While Chad has significant and varied energy resources (oil, gas, solar, wind, and biomass), these are only partially developed. In addition to this, the distribution system is ineffective with technical and commercial losses estimated at 36 percent of the 2018 generation. Currently, only one solar IPP project is under advanced development (32 MW Djermaya Solar Power Plant, plus 8 MWh of battery storage, supported by WAEP). Additional investments include hybrid solar plants and solar PV mini grids in rural villages. The DtP initiative aims to harness the solar potential of 11 countries across the Sahel, including Chad through the deployment of up to 10 GW of solar PV by 2030. Chad is part of the Central Africa Power Pool (CAPP). However, through the engagement with the AfDB DtP, Chad has committed to joining the West Africa Power Pool (WAPP). The Program's support to Chad in Year 2 resulted in the following.

OUTCOME HIGHLIGHTS

Outcomes 1 and 3

Technical Assistance on G5 Sahel Desert to Power (DtP) Activities:

Policy Advice to Chadian Regulatory Unit on Nine Regulations to Strengthen Regulatory Framework of Power Sector: To promote best practices and standards in the electricity sector, the WAEP team worked with the Autorité Régulation de Secteur d'Electricité (ARSE) in Chad to identify critical gaps in drafting contracts and providing strategic recommendations to Chadian authorities. The WAEP team **reviewed nine documents that are key to the operationalization of the regulatory agency**. These included: three documents related to the terms of reference for granting generation, transmission, and distribution concession, three documents related to the standardized template/format for the generation, transmission, and distribution concession contract and, three documents related to the standardized template/format for the generation, transmission, and distribution license. This activity will contribute to enabling the regulatory authorities to better regulate the power sector through the production of standard documents and model contracts that will be used in negotiations with prospective private sector players.

Support to Unlock a US $21 Million Loan to Bring the 32MW Solar PV + 8 MW BESS Djermaya Project to Financial Close: The WAEP team continued to provide technical and advisory support to strengthen G5 Sahel Independent Power Producers (IPPs). Regarding the 32MW solar PV + 8 MW BESS Djermaya project in Chad, the WAEP team assisted the AfDB Task Force in reviewing the direct agreement for financing and evaluating proposals for the Sustainable Energy Fund for Africa's (SEFA) technical assistance to Société Nationale d'Electricité du Chad (SNE). The project's support was instrumental in **unlocking a loan of US $21 million** approved by the AfDB Board of Directors in early February 2021 for the Djermaya project. This represents a significant step in **helping the project reach financial close in Q1 of Year 3.**

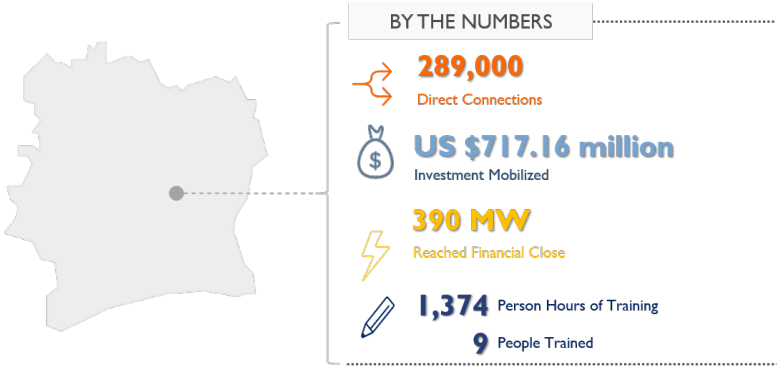
On the storage side of this project, the WAEP team held discussions with Wärtsila, a technology provider, to assess the impact of intermittent power injection on the operating mode of existing Wärtsila units at Farcha 2 (particularly Djermaya and Quadran PVs) and the potential changes, modifications and costs. Per

the discussions, the WAEP team was able to advise SNE on the sizing and the specification of the technology to address intermittent power injection.

Positioning the 30MW (2x15MW) Qair Solar PV Project for Financial Close: Regarding the 30MW (2x15 MW) Qair Solar PV project in Chad, the WAEP team assisted AfDB in reviewing the grid integration analysis of the Qair Solar PV project, particularly the pertinence of integrating a BESS. This forms part of the WAEP team's support to the AfDB Investment team. Once there is a legitimate transfer of power in Chad, this project is expected to reach financial close in 2022.

Figure 5: Photo of HV Transmission Switching Station in Cote d'Ivoire. Photo Credit: @PAWAEP

2.2.5. COTE D'IVOIRE



Côte d'Ivoire has one of the highest rates of electrification in the region. Its urban electrification rate is at 94% while its rural electrification rate is at 37%. It has a government-sponsored and donor-supported Electricity for All Program (PEPT) which commenced in 2015 with a target for grid-tied connection of one million households in five years. While the country's electricity grid is relatively expansive and access rates are high, the actual share of household connection is low – largely due to the upfront cost of connection. Côte d'Ivoire's existing electrical system is the third largest in West Africa which positions the country as one of the main hubs of electricity trade within the West African Power Pool. In Côte d'Ivoire, the WAEP team focuses on transaction support to diversify the energy mix, support for procurement and project development processes, support towards the operationalization of regional trade from Côte d'Ivoire among others. In FY 21, the WAEP team achieved the following.

OUTCOME HIGHLIGHTS

Outcome 1

390 MW from CIPREL V Reached Financial Close and US $717.16 Million Mobilized in Year 2 via support to Energies de Côte d'Ivoire (CI-Energies): The WAEP team provided technical assistance to the utility company in Côte d'Ivoire, CI-Energies, in the identification of debt financing for a 400kV transmission line needed for the connection of the 390MW Ciprel V gas-to-power plant and the 255MW generation asset, Azito IV power plant. This support enabled CI-Energies to mobilize a total investment of US $844.16 million to bring Azito IV and Ciprel V to a financial close. A breakdown of the total investment mobilized is US $127 million which helped Azito IV reach financial close in Year 1 and US $717.16 million which brought CIPREL V to a financial close in Year 2.

Transaction Advisory Assistance for the Development of the 27MW Tiassale Hydro Project: The WAEP team, drawing from its technical expertise, supported the Tiassale Hydro project sponsor, Bandama Energy, to develop and strengthen their grant proposal to the United States Trade and Development Agency (USTDA) to fund an expanded project feasibility study. The WAEP team's assistance to this project will help catalyze the project development process and ideally help identify opportunities for US suppliers for the project which should reach financial close by Q2 of Year 4.

***Transaction Advisory Assistance for the Development of the 73MW Divo Biomass project*.** Building on the support the WAEP team provided in Year 1 to the project's sponsor, 'Société des Energies Nouvelles' (SODEN), the WAEP team continued to coordinate with USTDA in advocating for the Divo Biomass project with the government. Additionally, WAEP has engaged the African Finance Corporation (AFC) as a potential co-developer and equity partner for the project. AFC would add substantial weight to SODEN's negotiations with the government as well as a wealth of project development/project finance expertise. AFC and SODEN are currently negotiating a joint development agreement (JDA) expected to be signed in Q1 of Year 3.

Project Development Assistance for the 28MW Kokumbo Hydro project. The WAEP team supported EleQtra, the developer of the Kokumbo Hydro project, to conduct an independent market assessment of the Ivorian power markets for the purpose of gauging market demand and strengthening the investment thesis for potential equity investors. The independent market assessment which was

completed in Q4 of Year 2 is intended to demonstrate to potential equity investors the viability of the market.

Outcome 2

Strengthening CI-Energies' GIS Capacity in Electrification Planning Yields 289,000 Connections: In Year 2, the WAEP team strengthened the capacity of CI-ENERGIES to evaluate the current state of the GIS platform and to develop an action plan to update the Côte d'Ivoire National Electrification Plan. The focus of this activity is to harmonize GIS data collection, organization and processes across utility departments to maximize the use of GIS. This effort will inform national electrification efforts in line with the 'Electricity for All Program' (PEPT) for the next five years and will result in approximately 200,000 connections per year. WAEP's support to date with CI-ENERGIES in utility performance improvements, produced an additional **289,000 connections** in Year 2.

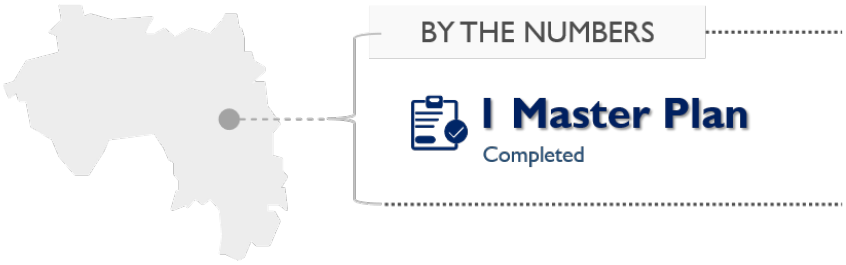
Figure 6: Capacity building session in GIS Systems to Staff of CI-Energies- Photo Credit: @PAWAEP, 2021

Connexions Plus - Creation of a Visual Dashboard to Track PEPT Connections and Source Funding: The WAEP team is working with CIE within the framework of PEPT to assess the impact of the program to date and to facilitate the involvement of the private sector and increase the impact and sustainability of the PEPT. In Year 2, the WAEP team and CIE prepared a detailed methodology for a socio-economic impact study of the PEPT to evaluate how PEPT consumers are using their electricity productively. The team also developed a Concept Note for new business approaches for households and communities to practice more productive uses of electricity. To support the sustainability of PEPT, the team is also creating a visual dashboard to track PEPT connections and serve as an advocacy tool to sustain funding for PEPT. The dashboard will be geared for internal CIE use to enable improved tracking of connections, and will also be geared to donor, diaspora and private sector to encourage increased mobilization of funding.

Outcome 3

Capacity Building on Loss Reduction to CIE and CI-ENERGIES: With the integration of West African Power Pool (WAPP) member country systems and the introduction of solar PV on Côte d'Ivoire's national grid, it is important that WAPP understands the dynamic behavior of the power system. This will help WAPP ensure reliability of the system and prevent unplanned power disruptions. On this premise, the WAEP team **facilitated the 'DigSilent Power Factory' Training for CI-ENERGIES,** with sessions focused on general aspects of electrical systems, dynamic and quasi dynamic analysis. For the nine participants who partook in the remote training, the training presented the needed skills to conduct dynamic and quasi dynamic analysis of the power system, reduce technical and non-technical losses in transmission and distribution systems as well as improve utility performance through **techniques to reduce the frequency and duration of outages.**

2.2.6. GUINEA



In Guinea, access to energy remains at 88 percent in urban areas and 3 percent in the rural areas with 42 percent overall access as of 2019. In 2017, the Government adopted a target to increase access to electricity from 18.1 percent to 36 percent by 2020 and a shift to universal access by 2030. The Guinea National Least Cost Electricity Access Program (PNAAEMC) has mobilized funding for connections to the main grid. Considering that power demand is expected to grow at about 10 percent per year in the next 10 years, mini grids will be developed to electrify remote localities where grids cannot reach. To meet the medium- to long-term energy needs, the country developed the 400MW Souapiti Hydropower plant; however, this plant has remained a stranded asset due to the lack of transmission lines from the plant. The Government of Guinea (GoG) within year two of implementation requested support from Power Africa in the areas of: (1) solar power development; (2) hydropower development; and (3) gas-to-power development for the mining industry. On September 5, 2021, **a military coup took place in Guinea, resulting in a notice from the Power Africa Contracting Office on October 4 to suspend all direct support to the Government of Guinea.** Below are some highlights of the Program's activities in Guinea in FY 21, prior to the receipt of the above-named Notice.

OUTCOME HIGHLIGHTS

Outcome 1

Technical Assistance to the Guinean Ministry of Energy to Address Risks Associated with IPPs and completion of the Power Sector Master Plan: As part of technical assistance to the Guinean Ministry of Energy, the WAEP team assisted the Ministry on commercially available options for addressing risks associated with IPPs. The WAEP team supported the Ministry to complete the Mining study which outlines commercially available credit enhancement tools for strengthening the credit worthiness of planned independent power projects under review by the Ministry. This support was instrumental to the completion of the Guinea Power Sector Master Plan.

Figure 7: Participants of PNAAEMC Electrification Planning Kick-Off Meeting. Photo Credit: @PAWAEP, 2021

Facilitating Investments in Khoumagueli 40MW Solar Project: During much of Year 2, the WAEP team worked to support the Khoumagueli 40 MW Solar Project in Guinea. The sponsors behind the project in Guinea, signed a 25-year PPA with Electricité de Guinée (EDG). The state utility's first grid-tied solar project is designed to complement EDG's nearby 75MW Garafiri hydroelectric power plant, helping to offset the impact of fluctuating rainfall on hydropower generation. The Khoumagueli project developers include Solvéo Guinea Renewable Energy, a subsidiary of France's Solvéo Energie, and Private Infrastructure Development Group (PIDG) member. InfraCo has invested US $3.1 million in equity while PIDG Technical Assistance and France's Agence de l'Environnement et de la Maîtrise de l'Energie provided

grant funding. The WAEP team has presently suspended support for Khoumagueli given the recent political developments in the country.

Outcome 2

Support to PNAAEMC and AfDB in Guinea Electricity Access Scale Up Project (PAAEG): The WAEP team's support to PNAAEMC was a component of the US $153 million Guinea Electricity Access Scale Up Project (PAAEG) led by the AfDB and co-financed by other donors. In Year 2, the WAEP team delivered to PNAAEMC **a major report highlighting the current state of electrification efforts in Guinea and recommendations to optimize geospatial electrification planning** and coordination between power sector entities to facilitate 460,000 anticipated connections to unelectrified communities.

The WAEP team, through its Guinea Country Manager, advised the Ministry of Energy on a number of activities related to universal electrification. This resulted in the selection of a consulting firm for the preparation of the new Sector Policy Letter and an update of the Legal Framework. The WAEP team's role was instrumental in the (i) definition of the strategy of the GoG for universal access to electricity; (ii) review of the draft Performance Contract between the GoG and the utility EDG; (iii) drafting of the request and preparation of supporting documents for financing the electrification of 148 localities under the framework of ECOWAS Regional Electricity Access initiated by the World Bank; and (iv) definition of the approach for the acceleration of the implementation for the Southeastern Guinea connection in the CLSG transmission network and the commissioning of the main city Nzerekore achieved in August 2021. Again, this activity has been halted considering the above mentioned notice the program received.

2.2.7. LIBERIA

Although Liberia has made steady progress towards rebuilding its power system which was destroyed during the 1989 to 2003 civil war, Liberia has one of the lowest electricity access rates in the world (3% rural; 16% urban). Populations with electricity in Liberia face one of the highest costs of electricity in the world with the Liberia Electricity Corporation (LEC) tariffs of USD 0.50 per kWh. By 2030, the Government of Liberia aims to meet an anticipated peak demand of 300 MW and serve one million customers, connect 70% of the population in Monrovia and provide access to 35% of the rest of Liberia. Management contracts and donor funding has helped LEC increase generation, connections, and transmission lines but LEC remains financially insolvent, largely due to high losses and commercial inadequacies. This year, the Program contributed to the following in Liberia.

OUTCOME HIGHLIGHTS

Outcome 2

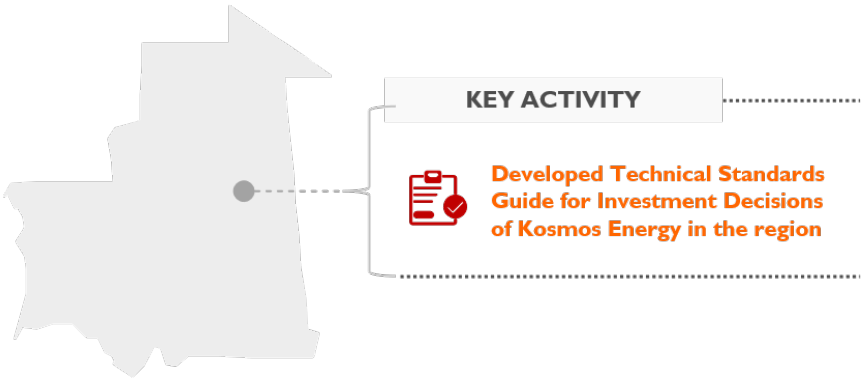
Added 38,020 New Connections to the Grid via Support to LEC: In Liberia, the WAEP team is supporting LEC to maximize private sector participation in commercial operations, frontline technical maintenance and the proper functioning of newly commissioned distribution networks to ensure that all new connections are correctly uploaded on to the central billing system and that losses are minimized. As a result of the teams' assistance with LEC's COVID-19 business continuity planning and utility sector reform, the WAEP team finalized documentation that resulted in **38,020 new connections** to the grid.

The WAEP team worked with LEC to develop a procurement approach for a management services contract for the operation of a newly commissioned network financed by USAID in Bong County. The activity will also improve LEC's ability to manage competitive procurement for private sector participation and 'Request for Proposals' (RFP) development for future projects.

Outcome 3

Support to Improve Liberia Electricity Corporation (LEC) Franchising Activity to add 2,710 New Connections: The WAEP team continued to support LEC to improve its regulatory processes for an upcoming procurement through various trainings and working sessions. With the support of the WAEP team, LEC released an invitation for bids for the "Franchising of the Bong County Electricity Operations" in September. The winning bidder will maintain and operate the new system in Bong County. This activity will add 2,710 connections once the system is online, with the potential for an additional 3,000 household connections to the newly installed LV network over the course of the contract. It will also contribute to improvements in cost recovery and AT&C loss reduction.

2.2.8. MAURITANIA

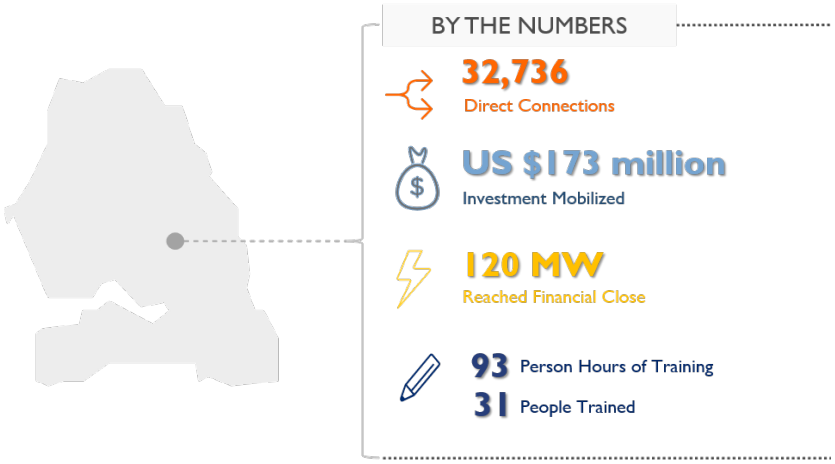


OUTCOME HIGHLIGHTS

Outcome 1

Collaboration with Kosmos Energy in the design of a gas master plan to enable 500 MW of additional power for Mauritania and Senegal: In Mauritania, the WAEP team is working closely with Kosmos Energy in designing the gas master plan which has the potential to roll out a 500 MW gas to power plant for gas markets in Mauritania and Senegal. In FY 21, the WAEP team validated assumptions and scenarios for best utilization of fuel and put together technical standards to guide the investment decisions that Kosmos Energy makes in the region. This activity will be finalized in Year 3 once Kosmos Energy confirms its investment decisions.

2.2.9. SENEGAL



In Senegal, electricity is relatively expensive due to the high cost of generation and high technical and non-technical losses. As of 2018, the electricity access rate was 92% in urban areas and 40% in rural areas. These challenges have put Senegal's utility company, SENELEC, in a financially unstable position mainly due to the absence of cost reflective tariffs. Contributing to lack of SENELEC liquidity are a high amount of arrears from public institutions including tariff subsidies, public administration and decentralized public entities. Considering Senegal's strategy to achieve universal access by 2025, bridging the gap requires a continuous collaborative strategy between government and concessionaires. To overcome high technical and non- technical losses, a few actions are needed to continue reducing the 17.7% losses reported in 2018. The Program's support to Senegal in FY 21 resulted in the following.

OUTCOME HIGHLIGHTS

Outcome 1

Facilitating the Transition to Renewable Energy through Energy Demand Forecasting: To enable the Senegalese utility company, SENELEC, better anticipate and plan for its future energy needs, the WAEP team worked with SENELEC to improve its energy demand forecasting techniques. The support included a diagnostic analysis of the existing processes and tools used by SENELEC for forecasting energy demand. Following the diagnostic analysis, the WAEP team developed a more advanced set of tools for energy demand forecasting within SENELEC. In addition to the tools, the WAEP team developed a training to strengthen the SENELEC team's capacity in utilizing the new tools to effectively conduct energy demand forecasting. The WAEP team will deliver the final training in Q1 of Year 3. This support to SENELEC is intended to ultimately improve the work of SENELEC's planning unit by informing the Energy Sector Master Plan, to facilitate transition to a renewable energy society, and to de-risk the pipeline for future generation for best investments in the sector.

Mobilized US $173 Million to Assist the 120 MW Malicounda Power Plant Reach Financial Close: The WAEP team **prepared an extensive assessment report** of the **120 MW Malicounda Power Plant** for AfDB, to support the Government of Senegal generate more financing solutions for cleaner energy projects. By de-risking the gas supply, the report contributed to the Government of Senegal and AfDB's ability to secure a US $86.5 million (equivalent of €75 million) bridge loan. **Notably, the total project cost is $173 million (equivalent of €150 million)**. The plant is expected to be commissioned in October 2021. AfDB is also using the assessment report to decide on a debt facility to potentially replace the equity finance invested in the project by the developer.

Sector Strategy Assistance to Support Financial Close of Tobene115 MW Power Project: In Year 2, the WAEP team conducted a Fuel Supply Assessment for the Tobene115 MW Project as part of efforts to help the project reach financial close in Year 3 and to de-risk the financing of the project. The assessment report provides a comprehensive overview of the sector and identifies the factors that could impact the Tobene project, which include timing of gas supply, pricing, sourcing, and potential demand

from other plants. The report highlights the challenges parties will face prior to commencement of production in the Yakaar Gas field. The stakeholders, including Azura Power (Morgan Huchet, Guy Demirdjian and Dave Peacock), Actis (Sadio Wade) and Africa 50 (Etzerson Philitas, Sadio Wade and Gilmore Achenjang) and the developer, believe that the report will significantly contribute to closing the financing of the conversion.

Project Finance Advisory Assistance to Potou Wind Farm (50 MW+10MWh Storage wind): The WAEP team supported Enertec to develop a **comprehensive financial training model/plan** to enable Enertec enhance and update its financial model. The WAEP team further conducted a series of three financial trainings for Enertec to increase the project's bankability by enhancing the developer's capacities. Further the WAEP team reviewed Potou's financial model and shared feedback with the sponsor based on which Potou has currently updated its financial model. Following engagements with multiple investors to discuss the Potou project opportunity, the WAEP team is supporting ongoing discussions on a JDA between 'responsAbility Renewable Energy Holdings' (rAREH) and Enertec. This project should reach financial close by Year 4.

Outcome 2

Optimization of Senelec Capacity to implement Universal Electricity Access Program Yields 32,736 Connections: In Year 2, the WAEP team began support to SENELEC through a series of activities to facilitate Senegal's Universal Access Program. The team reviewed available studies, reports and databases related to the program and distribution network of areas to be electrified or undergoing electrification and validated data to support electrification planning through field exercises throughout all 14 regions of the country. The analysis from the field exercise yielded data collected from more than 4,000 electrified and non-electrified households, small businesses, and authorities of both electrified and non-electrified localities.

Figure 8 Sample of prepaid metre in the village of Sanghe, Thies region.

The WAEP team is now using this data to prepare plans for the execution of two phases of SENELEC's Universal Access Program, as well as identifying solutions to lower the cost and time to connect in localities where the access rate is very low. In total, the WAEP team's support is guiding the roll-out of future connections and supporting SENELEC to address barriers and accelerate connections in regions already connected to the grid. Already, the team's support has yielded over **32,736 connections** in Year 2 and will facilitate nearly 600,000 new connections in Years 3 and 4.


Figure 9 Transmission line captured in the Thies region

Outcome 3

Tariff Design Training for 20 Civil Society Organizations: The WAEP team delivered a three-day workshop in June to strengthen the capacity of about 20 social accountability actors to engage more, advocate for and approve cost-reflective tariffs in Senegal. The different modules included an inception training delivered by Deloitte France on the foundation of tariffs. The Commission de Régulation du Secteur de l'Électricité (CRSE) also presented the specific methodology and design of tariffs for the country.

2.2.10. SIERRA LEONE

Sierra Leone has one of the lowest rates of access to electricity in the sub-Saharan region, with 53 percent urban and 6 percent rural electrification rates. It has a generation mix of 48 percent hydro and 52 percent heavy fuel oil during the rainy season, and a generation mix of 17 percent hydro and 83 percent heavy fuel oil during the dry season. The government set a target to increase the electrification rate to over 30 percent by 2023 through grid extension, mini-grid, and off-grid solutions. Currently, there is slow off-grid electrification due to financial, regulatory, and coordination constraints. The sector relies on government subsidies and struggles to break even due to high operating costs and high technical/commercial losses. Additionally, the sector does not have the capacity to carry out sector planning, policy initiatives, or procure, evaluate, and implement private-sector generation projects. The WAEP team's support to Sierra Leone in the year under review resulted in the following:

OUTCOME HIGHLIGHTS

Outcome 1

Extensive Support to the 85 MW Gas to Power Western Area Power Generation Project (WAPGP) Sponsored by TCQ Power and Milele Energy: The WAEP team conducted an extensive review of fuel supply offers which it submitted to the project sponsors, TCQ Power and Milele Energy. The team also advised on alternative fuel supply options in the region. The WAEP team prepared a database of potential equity partners broken down into financial institutions and developers and then provided an extensive review of the Project Information Memorandum (PIM). The WAEP team also reviewed the data room and identified critical gaps in the information shared by the sponsors. This will enable the WAPGP to reach financial close in Year 3.

Project Development Support for the 27MW Betmai Hydro Project Sponsored by Sewa Energy Resources: The WAEP team supported the project in three principal areas: (a) debt sourcing and equity finance, (b) identifying available credit support options and (c) conducting the ESIA bankability gap analysis for the project. WAEP made significant improvement to the project's financial model and facilitated the financial model audit process which is a condition precedent for financial close. The WAEP team contributed to the finalization of the project teaser which will be used to engage debt and equity providers. The team also helped prepare JDAs and equity term sheets for the sponsors. Finally, the team contributed to discussions with the Rockefeller Foundation, which is in final discussions with Sustainable Energy for All (SE4ALL) to act as the intermediary for support. The Betmai project is expected to reach financial close by Q4 of Year 3.

Outcomes 2 and 3

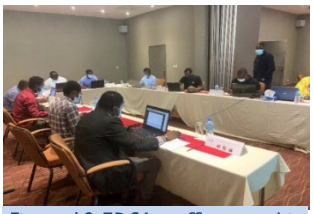
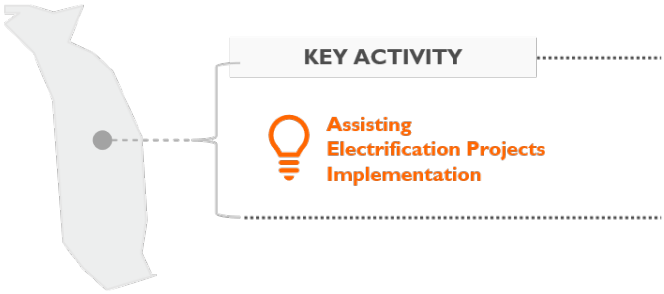


Figure 10 EDSA staff engaged in the ArcGIS Training

Supported Utility Performance Improvements at Electricity Distribution and Supply Authority (EDSA): EDSA's losses are some of the highest in the region and targeted assistance focused on quick wins could have a significant impact on the financial viability of the utility. From engagements with EDSA in Year 2, the WAEP team designed quick wins solutions to bring down commercial losses by sanitizing customer databases, targeting business process re-engineering for metering management, and operationalizing use of GIS across all departments. The WAEP team delivered a targeted two-day training on GIS workforce management and identified next steps to ensure full utilization of EDSA's new GIS system to support utility performance. These efforts would largely contribute to aggregated technical and commercial (AT&C) loss reduction, increased cost recovery, and increased on-grid new and regularized connections.

Figure 11 Picture of some Ivorian citizens in a commune in Cote d'Ivoire using electricity to enhance their economic ventures. Photo Credit: @PAWAEP, 2021

2.2.11. TOGO



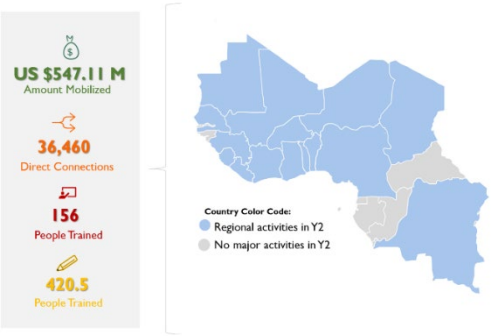
In Togo, the current electricity access rate is 35%, with large disparities between urban and rural populations (Rural: 5% Urban: 74%). In 2017, the Government of Togo launched a presidential initiative called "CIZO," which seeks to increase rural electrification rates to 40 percent by 2022. The majority of Togo's generation capacity is thermal (164 MW) with total installed capacity of 230 MW and 66MW in hydro. Togo's electricity consumption is imported (65-70 %) from Transmission Company of Nigeria (TCN) in Nigeria, the Volta River Authority (VRA) of Ghana and Compagnie Ivorienne d'Electricité (CIE) in Côte d'Ivoire. However, the reliability and quality of supply from Nigeria has been poor, and energy security considerations prompted Togo to develop additional domestic generation capacity. In 2018, the Government of Togo announced a new electrification strategy for the country with a vision of increasing the rate of access to electricity from 45% (2018) to 60% in 2030. The WAEP team is therefore looking for opportunities to develop project pipeline, support capacity building for CEB and CEET to increase technical performance and cost efficiency. One key program milestone in Togo in FY 21 is as follows.

OUTCOME HIGHLIGHTS

Outcome 2

Supporting Electrification Projects Implementation: The WAEP team engaged with Compagnie Energie Electrique du Togo (CEET) and Directeur Général de l'Énergie (DGE) to advance collaboration in the area of connections. This was a follow up to the Program's support in Year 1 to CEET and the Government of Togo (GOT) to obtain funds and improve speed to facilitate 400,000 connections through 2025.

2.3. REGIONAL ACTIVITIES



Over the course of the reporting period, the WAEP team closely engaged with counterparts in many of its focus countries to enhance electrification activities, provide on the ground advisory services, improve institutional structure and capacity, and create the enabling environment for donor coordination and gender inclusiveness. At the regional level, the Program's influence consciously targeted all countries within the region, including G5 Sahel member countries and a few Central African countries. The program delivery spread across three broad areas discussed in sections below.

2.3.1. ADVANCING THE DESERT TO POWER (DtP) INITIATIVE WITH AfDB

DtP is an initiative of the AfDB that seeks to accelerate economic development through electricity access. The initiative is looking to generate 10 giga watts (GW) electricity through photovoltaic (PV) solar systems via public, private, grid and off-grid projects by 2030. This is to enable approximately 250 million people access electricity by 2030. Considering the enormous economic challenges that people in the G5 Sahel region are confronted with, the initiative which covers 11 African countries has dedicated its initial support to the G5 Sahel countries, including Burkina Faso, Chad, Mali, Mauritania and Niger. The WAEP team supports the DtP initiative by developing recommendations for generation and distribution projects. The WAEP team also provided a dedicated Embedded Advisor to primarily focus on supporting transactions in the DtP countries as required.

OUTCOME HIGHLIGHTS

Outcome 1

Support to AfDB with the Design of a Funding Proposal to Mobilize US $150 Million Dollars from the Green Climate Fund (GCF) for the DtP Facility: The WAEP team contributed to designing a funding proposal that will allow the AfDB to **mobilize US $150 million from the GCF in early October 2021**. The GCF funding to the DtP facility will enable a US $380 million dollars co-financing from the AfDB which is expected to be approved by its board in November 2021 **for the development of 500 MW solar PV** plus 239 MW/MWh of battery storage in the G5 Sahel Countries (Burkina Faso, Chad, Mali, Mauritania, and Niger). These funds aim to leverage US $437 million dollars of private sector investments.

2.3.2. SUPPORTING REGIONAL ENERGY MARKET ACCELERATION

The West Africa Power Pool (WAPP) Information and Coordination Center (ICC) presented a concept note to the WAEP team outlining areas of specific support. Given the current COVID-19 work environment challenges, the WAEP team engaged with the WAPP ICC officials virtually. The WAEP team capitalized on activities that could be delivered through remote work so that once travel is permitted, more activities requiring groundwork could be implemented. Where necessary, the WAEP team collaborated with Deloitte US commercial team or external contractors and partner organizations as well as consultants to develop and deliver the assistance needed to WAPP ICC.

Outcome 4

Support to the WAPP ICC: The WAEP team's support to WAPP ICC focused on accelerating the establishment of a high-functioning regional power market in the following ways:

- ***Harmonizing Regional and National Planning:*** The WAEP team conducted an assessment of existing practices and tools used by WAPP ICC and some WAPP member utilities. Following the assessment, the WAEP team developed a roadmap to establish an appropriate process for the selection of generation and transmission adequacy tool(s) to enable coordination between the WAPP ICC and member utilities.
- ***Capacity building for WAPP ICC to Conduct System-Wide Adequacy and Reliability Studies:*** The WAEP team finalized the review of 13 WAPP business process documents to ensure that the documents align with the WAPP Grid Code (under development). Once approved by WAPP's Engineering and Operation Committee, these documents will become official documents that WAPP ICC will use to coordinate different planning and operation processes with WAPP ICC members.

Joint Technical Assistance to WAPP ICC:

- ***Development of five inception report for the Assessment of WAPP's Security and Optimal Power Flow:*** The WAEP and CESI/EnerNex teams began a series of activities to support WAPP ICC to strengthen its internal capacity and enhance its operations. Both teams collected and collated data for the Security Assessment and Optimal Power Flow studies for WAPP which resulted in the development of five inception reports including: (1) Security Assessment, (2) Optimal Power Flow Assessment, (3) Regional Flexibility Assessment, (4) Transmission Adequacy, and (5) Generation Adequacy studies. Three other studies are yet to be conducted once WAPP has the PLEXOS planning tool necessary to conduct the studies.

- ***Detailed documentation to inform the purchase of the PLEXOS tool for WAPP***: To make a case for the one-time financial support request for the purchase of PLEXOS, the WAEP team prepared four reports including an (1) "Analysis of Regional Needs for Power Systems and Planning Tools", (2) "Evaluation of power planning software alternatives", (3)"Recommendations for Power Planning Tool," and (4)"Business plan and sustainability analysis of planning software procurements" for WAPP ICC.

- ***Assessment of capacity building needs for WAPP ICC, NCC and CAC:*** The WAEP and CESI/EnerNex teams conducted a preliminary assessment of the capacity building needs and the current state of communication architecture of ICC, CAC, and NCC. The assessment of the communication architecture is to facilitate accurate and real time SCADA/EMS Data Exchange between WAPP ICC, NCC, and CAC. Both teams prepared and submitted to WAPP ICC two draft analysis reports on the "Existing Status of the Strategic Roles and Responsibilities" and the "Potential Future Roles and Responsibilities in WAPP Region". The teams also developed a questionnaire to collect data to assess the available ancillary services and ancillary service resources in the WAPP region. These will be followed up in FY 22.

WAEP Participation at the WAPP Technical and Financial Partners (TFP) Annual and General Assembly: As part of the ongoing partnership between WAPP and the Program, the WAEP team was invited to and participated in the 35th WAPP TFP Annual and General Assembly Meeting held in Lomé on December 10, 2020. The goal of the session was to build the resilience of WAPP and PMUs to maintain continuity in delivering projects and to push for continuing development of the regional electricity market amidst the current challenges created by the COVID-19 pandemic. The meeting helped to highlight that WAPP's priority at present is to prevent further delay in the delivery of interconnector projects.

Aligning the Gambia River Basin Development Organization (OMVG) Grid Code with the WAPP Regional Grid Code and Optical Ground Wire (OPGW) Operating Agreement: The WAEP team contributes to the development of a technical document which will regulate the power system management of the OMVG transmission network in compliance with the current WAPP regulatory framework (e.g. WAPP Regional Grid Code). The document:

- summarizes the data collection action aimed at gaining and understanding the OMVG institutional framework as well as allocation of roles and responsibilities among involved stakeholders beside OMVG.
- executes an analysis between the OMVG reference document and the WAPP reference documents (i.e. the WAPP Operation Manual and the draft of the WAPP Transmission Grid Code).
- proposes a framework and a related reference document considered as the needed technical document to set out the technical rules for the execution of the technical functions under its own responsibility (Transmission Operators); and coordinate the implementation of its functions with the involved national utilities which will act as System Operators.

23,000 Connections and 867km Achieved Through TransCo CLSG Technical Assistance and Capacity Building: In Year 2, Transco CLSG **commissioned the 867km** Man-Monrovia- Kenema segments which marks Transco CLSG's movement from construction to commercialization. . The WAEP team played an instrumental role in this commissioning and our engagement was in two parts:: (i) supporting Transo CLSG to implement a finance technology system and develop a transition strategy to complement the move (ii) assistance to OMVG to align its operational principles with the WAPP Grid Code. The WAEP team supported **23,000 connections** in Sierra Leone facilitated through our support to CLSG line and Bo-Kenema line extending from CLSG.

2.3.3. STRENGTHENING INSTITUTIONAL CAPACITY ACROSS THE REGION

Outcome 3

11 Needs Assessment Reports Validated Across the Region to Harmonize Regional and National Power Planning Tasks, Improve Performance and Reduce Losses: The WAEP team deployed the NAST in a needs assessments for utility and regulatory firms across 22 countries in the region, with 11 regulatory NAST reports validated. The reports covered Burkina Faso, Benin, Liberia, Sierra Leone, DRC, Guinea, Gabon, Cape Verde, Gambia, Chad, Benin, Senegal, Mali and Togo. This is a major foundational step to harmonizing regional and national power planning tasks and supporting utilities in performance improvement and loss reduction. The WAEP team held two webinars to present the results from the Needs Assessment Surveys and to solicit improved donor coordination to fill gaps of utilities, regulators and PMUs in the region. The webinar featured 91 participants for both the utility and regulatory session. Overall, the sessions presented the opportunity to discuss the NAST results more widely and streamline cooperation with other donor agencies currently implementing, and/or planning to launch activities in the region.

Delivered Collaborative Training on Competitive Procurement and Power Purchase Agreement (PPA) Practices: To facilitate the development of a competitive energy generation market, the WAEP team, in coordination with the African Development Bank (AfDB), the Millennium Challenge Cooperation (MCC), the U.S. Department of Commerce's Commercial Law Development Program (CLDP) and the African Legal Support Facility (ALSF), delivered a two-day training for 65 participants on competitive procurement and PPA practices. Participants from Benin, Burkina Faso, Cameroon, Senegal, Sierra Leone, Togo, and Côte d'Ivoire who partook in the trainings attested that the sessions were effective in improving participants' knowledge on the tools and strategies available to improve the process of power procurement.

Figure 12 A screenshot taken during the PPA Workshop

Strategy to Decarbonize Power Generation and Accelerate the Clean Energy Transition in West Africa: The WAEP team prepared a strategy for targeted support to projects, to decarbonize power generation and accelerate the clean energy transition. The strategy outlined current generation needs in West Africa, and laid out the momentum for a new trajectory, involving climate engagement and the need to reinvent the power generation system to support intermittent renewable capacity. The proposed approach involves favoring short/mid-term gas infrastructure and contracts, pricing natural gas linked to renewables instead of Brent, supporting CO2e pricing, stopping subsidies on fossil fuels and replacing them with renewable fuels, lowering the GHG footprint and improving end-use efficiency. The intention is to create a West Africa Transition Roadmap, that will support public and private energy stakeholders to identify issues, policies and instruments which will be able to accelerate the energy transition in the region.

Supported Two Women to Transition into Leadership Roles within the Energy Sector: The Program supported the Young Africa Leadership Initiative (YALI) – Power Africa Young Women in African Power Training in Year 1 in Dakar, Senegal, by developing and facilitating nine training modules based on key energy sector concepts. The West Africa team sessions provided insight to 40 young women professionals on modern energy trends, key leadership skills to empower participants as they progress in their respective careers in the energy sector. Through the training, two women- one from Togo and the other from Senegal, who participated in this training have successfully transitioned to leadership roles in the sector.

3. LESSONS LEARNED AND LEAD SCALABLE PRACTICES

3.1. LESSONS LEARNED

This section highlights some key lessons the WAEP team learned during its virtual and in-person program delivery at both regional and national levels in Year 2.

- ***Leveraging Power Africa partners to achieve results:*** Working with Desert-to-Power is proving to be an effective way of best utilizing PA resources in the G5 Sahel, where a host of challenges make it difficult for WAEP to be effective on its own. It also contributes efficiently to meeting higher-level indicators. WAEP helps manage DtP and brings in WAEP resources to fill gaps where necessary.
- ***High level engagement in-country is more impactful:*** Given the option to support various partners in given countries, it appears that the most effective approach is to work closely with the highest possible entity such as Ministries or higher as it relates to the energy sector. Through this route, the decisions and impact of the support trickles into more departments and agencies across board and eventually yields more results for the program as well as more impact to the lives in countries where the activities take place.

- ***Ministries of Energy are more receptive of WAEP assistance than the utilities:*** Generally, the Ministries are responsible for oversight of utilities, but need to build their capacity to be effective. This is extremely important as Ministries deal with all components of the energy sector, including cooking and household energy, encouraging renewables, distribution of petroleum products and demand-side efficiency. The utilities tend to be only interested in singularly pursuing electric power objectives.

- ***Skill transfer is more effective than conventional capacity building:*** WAEP conducted both approaches to strengthen the skills of counterparts in various aspects. However, the skill transfer has proven to be more effective and more in demand. This approach focuses on working jointly with counterparts, co-constructing solutions based on best practices and ultimately allows the counterpart to reduce the reliance on external consultancy services to develop and deploy power efficiently. On the contrary, conventional capacity building would not remove this reliance hence increasing the development costs of projects among other things.

- ***Advisory services to partners help to realize maximum results:*** In terms of opportunity identification and support delivery for multifaceted impacts, wherever the WAEP team has deployed an advisor to multilateral agencies, governments or similar, the levels of mistakes in decision-making was minimized upfront. Again, various processes have been made more efficient, resources optimized for maximum results. This posture also increased trust and confidence which are all key to working with PA partners.

- ***Providing a Resident Representative:*** Having a resident representative at DtP who reports to WAEP management, is proving efficient. This way, the representative does not become overly swayed by internal bureaucracy and also does not report directly to the local institution management. There is more efficient implementation of Power Africa objectives.

- ***In person engagements are a catalyst for power administration at all levels:*** While remote engagement is still the norm in the COVID-19 era, in-person engagements are still important whenever possible. The field visits to Côte d'Ivoire, Guinea and Sierra Leone have catalyzed several activities through strengthened and renewed connections with key persons in various power administration positions in the WAEP countries.

3.2. LEAD SCALABLE PRACTICES

This section of the report draws on some key practices that the WAEP team considers could be scaled up or replicated in the program implementation.

- ***Regional Approach to Capacity Building and Training:*** While conducting the NASTs in the different countries, the WAEP team realized that several countries had submitted similar training and capacity building requests, for utilities and regulators in-country. Following the example of the COVID 19 Webinars that took place earlier on in Q1 and Q2, the team adopted the same approach to organizing webinars for utilities and regulators on the NAST findings. Altogether, the webinars were impactful in reaching a larger number of people from various countries. The webinars presented experience and knowledge sharing platforms to strengthen sector governance and create the enabling environment for private sector investment in the power sector across several counterparts and countries. This approach to capacity building will continue throughout the lifespan of Program alongside in person engagements as it ensures an optimal use of resources and time.
- ***Grid Stabilization Assessment:*** Following the example of Chad with the Djermaya project, the team considers that more grid stabilization can allow for more penetration of renewable energy. Thus, the WAEP team plans to continue grid stabilization assessments throughout the Life of Program.
- ***SAEP Procurement Guide:*** The SAEP team developed a procurement guide as part of support to its target countries to improve their procurement practices. In the WAEP team's work with governments and regulatory units, the team found that the SAEP procurement guide was a very useful tool. To scale up the use of the guide, the WAEP team suggests contextualizing the SAEP Procurement Guide for use within West Africa.

Program Management, Finance, and Operations

4. PROGRAM MANAGEMENT OFFICE, FINANCE, AND OPERATIONS

4.1. PROGRAM MANAGEMENT OFFICE

The Program's centralized Program Management Office (PMO), continued to coordinate cross-cutting functions in Year 2, including communications; environmental mitigation and monitoring; monitoring, evaluation, and learning; gender mainstreaming; and civil society and community engagement, to ensure integration into project activities. The PMO team worked to streamline the development of contractual and technical deliverables, as well as external communications, to maximize efficiency and quality assurance. The PMO team regularly engages with the Nigeria Power Sector Program (NPSP) and Southern Africa Energy Program (SAEP) teams, to discuss leading practices with regards to cross-cutting and program management functions, reporting, and to share lessons learned.

4.1.1. GENDER STRATEGY AND INTEGRATION

In line with Power Africa's goal of increasing women's participation in the energy sector workforce and increasing women's access to energy services in West Africa, the WAEP team pursued gender activities that focused on the areas of Leadership Development/Networking, Mentoring, Communications, and Organizational Policies and Human Resources.

- ***Promoting Awareness and Leadership Through Women Energy Champions Series***: Many of the challenges faced by women in the energy sector result from limited awareness of the opportunities that could help them overcome these challenges, i.e. opportunities in the job market, finance, training programs, networks. To address this challenge, WAEP did monthly features of successful women in the energy sector, focusing on their personal and professional journeys, with the goal of inspiring women who want to join the energy sector as well as those already working in the sector. The WAEP team developed a total of nine monthly features via social media networks of the personal and professional journeys of successful women in the energy sector to inspire more women to join/stay within the energy sector.


USAID
FROM THE AMERICAN PEOPLE
POWER AFRICA
Women Champions in the Energy Sector
Mariama Kamara
Founder/Director, Smiling Through Light
"We don't want to see women as just consumers. (Women) can play a role across the whole value chain. We are more than capable of doing that."

Figure 13 Published story on Mariama Kamara, Founder and Director, Smiling Through Light – Sierra Leone

[3] Previous divider photo: Regional Energy Summit in Dakar, Senegal, December 2019. Photo: PA WAEP

Table 1: Women Energy Champion Series – Speakers and Social Media Posts

Women Energy Champions	Title, Organization	Social Media Content
Maame Tabuah Ankoh	Consulting Energy Specialist, World Bank Ghana	LinkedIn and Facebook
Harriette Amissah-Arthur	Executive Partner, Arthur Energy Advisors	LinkedIn, Facebook, Instagram, and Twitter
Eunice Biritwum	Power Planning Manager, USAID WAEP	LinkedIn, Facebook, Instagram, and Twitter
Ifey Ikeonu	Energy Policy, Market, and Regulation Consultant and Former Chair, ECOWAS Regional Electricity Regulatory Authority	LinkedIn, Facebook, Instagram, and Twitter
Monica Senanu	Director, Legal, and Board Secretary, Ghana Grid Company Limited	LinkedIn, Facebook, Instagram, and Twitter
Mariama Kamara	Founder and Director, Smiling Through Light	LinkedIn, Facebook, Instagram, and Twitter
Sabina Anokye-Mensah	Founder and Chief Executive Officer, Anomena Ventures	LinkedIn, Facebook, and Twitter
Dr. Ngalula Sandrine Mubenga	Director General, Electricity Regulatory Authority, DRC and Professor, College of Engineering, University of Toledo	LinkedIn, Facebook, Instagram, and Twitter
Ivy Apea Owusu	Chief Executive Officer, Cirrus Oil Services Limited	LinkedIn, Facebook, Instagram, and Twitter

Providing Gender Mainstreaming Support to the West African Power Pool (WAPP): Diversity in the workplace is linked to stronger organizational performance, yet women continue to encounter challenges like pay gaps, limited opportunities for training and advancement, and outdated human resource policies. In 2020, the West African Power Pool requested technical assistance from WAEP to better integrate gender concerns into its operations. In 2016, WAPP had commissioned a gender analysis, which found that most of WAPP's projects, programs and policies are gender blind. The analysis also found that women are under-represented at all levels across WAPP. Several recommendations came out of the analysis, including the recruitment of a gender expert, disaggregation of data in M&E reports, preparatory studies, and political, technical and financial commitments but not all of these have been adopted or implemented. To establish a baseline, WAEP conducted a survey among the WAPP Secretariat and member utilities to gather information on practices and participation, perceptions and beliefs, and internal policies. Results indicated that WAPP requires assistance in the following areas: (1) Gender awareness training and resources; (2) Hiring Practices; (3) Gender-sensitive project/program development; (4) Gender-sensitive monitoring and evaluation; (5) Inclusive procurement policies; (6) Succession planning; and (7) Sexual harassment policy formulation. This assistance is programmed to be carried out in Year 3.

Supporting Regional Women's Networks/Initiatives: As part of its overall thrust to build capacity throughout the region, WAEP worked with ECREEE to expand its work (through its ECOW-GEN program) in empowering women as active players in the energy sector in West Africa. Specific areas of collaboration included (1) establishing a women's regional energy association and (2) creating a regional Science, Technology, Engineering and Mathematics (STEM) internship program. Unfortunately, this partnership did not proceed because of a misalignment in terms of implementation mechanism. The two parties have agreed to find other ways to collaborate on these themes in the future.

Participating in Power Africa Gender Champs-Communities of Practice (COP): The WAEP gender team participated actively in the regular PA Gender Champs COP meetings to share information, updates, and lessons learned. The team contributed to discussions on the Learning Agenda related to productive uses of energy (PUE); monitoring and evaluation of gender support in energy and provided detailed updates on its gender mainstreaming support activities. The learning agenda will inform future interventions related to gender/PUE and strengthen gender-related MEL under the Program. The team is specifically looking into potential awareness-raising events on the intersection of gender and productive uses.

4.1.2. COMMUNICATIONS AND OUTREACH

Coordination with USAID and Power Coordinators Office: The WAEP Communications team continued its quarterly calls with the Power Africa Communications team to discuss priorities, and avenues to highlight the Program's achievements. The team also completed adhoc requests for information on the Program's status of results and achievements.

Quarterly and Monthly Progress Reports: The WAEP team's quarterly and monthly reports provide insight into Program activities conducted during the specific reporting period and highlight the WAEP team's support to stakeholders in the region and highlighting key milestones.

Social Media Content: Program events and successes were highlighted across Power Africa's Twitter, Instagram, Facebook and LinkedIn platforms to increase the Program's visibility and awareness among stakeholders and the public. Highlighted stories include

- The WAEP team's support to CI-Energies to acquire a loan to finance a 400 kV, 70 km transmission line, which will connect 645 MW of new power to Côte d'Ivoire's grid posted on Côte d'Ivoire's Independence Day. The content can be found on LinkedIn, Facebook, Twitter and Instagram.
- The WAEP team's range of assistance to TransCo CLSG to complete the 383 km Man-Monrovia transmission line and develop systems to improve the company's operational efficiency posted on Liberia's Independence day. The content can be found on LinkedIn, Facebook, Twitter and Instagram.
- The WAEP team's support to develop a project proposal to connect 400,000 households in Togo to electricity as part of a Universal Access Program posted on Togo's Independence Day. The content can be found on LinkedIn, Facebook, Twitter and Instagram.

Figure 14 Facebook post for Liberia Independence Day

- The WAEP team's support towards USTDA's Gas Feasibility study posted on Senegal's Independence Day. The content can be found on LinkedIn, Facebook, Twitter and Instagram.
- **Post COVID Webinars on Impact of COVID-19 on utilities in West Africa:** The content can be found on Twitter (Webinar 3); , Twitter (Webinar 4) , Twitter (Webinar 5)

Webinar and Presentation Support:
The PMO and OC teams worked closely to successfully organize and host webinars throughout the year including the following Social Accountability Actors; Utility and Regulatory Webinar Series; Introduction to Power Procurement in West Africa; and multiple COVID-19 Redirect webinars. The team also led the development of presentations on project achievements, coordinating between technical and cross-cutting teams and developing presentation storyboards and informational graphics.

Figure 15 Utility and Regulatory Webinar- Digital Invitation

4.1.3. ENVIRONMENTAL MITIGATION AND MONITORING

Environmental Monitoring and Mitigation Plan (EMMP): In Year 2, the WAEP team updated the CLIN 1 EMMP to reflect the revised November 2020 Power Africa 2 Project Appraisal Document (PAD) Initial Environmental Examination (IEE) containing the approved environmental determinations for the West Africa Energy Program (WAEP). The CLIN 1 EMMP was approved by USAID on January 28, 2021. The CLIN1 EMMP serves as the guiding document for WAEP's environmental compliance activities, as it outlines the environmental and social (E&S) safeguards and principles for WAEP's program delivery, steps and process for E&S compliance under USAID Regulation 216, and WAEP's process to address requirements in the Power Africa Initial Environmental Examination (IEE). The Program's Environmental Mitigation and Monitoring Report (EMMR) for FY21, presented in Annex F, documents the status of each required mitigation measure as stipulated in the associated Environmental Monitoring and Mitigation Plan (EMMP) for the project.

Screening of Work Plan Activities: In drafting the updated EMMP the Environmental Compliance team reviewed all activities across the WAEP Regional Year 2 Work Plan (CLIN 1). In drafting the updated EMMP the WAEP E&S team, in collaboration with the OC teams reviewed all activities across the WAEP Regional Year 2 Work Plan (CLIN 1). Throughout FY21, the team reviewed activity draft scopes of work confirming environmental compliance and detailing mitigation measures where necessary. The WAEP team identified environmental and social impact entry points for planned activities and opportunities to provide capacity building to counterparts to strengthen environmental and social compliance.

The majority of the CLIN 1 activities involved stakeholder consultations, planning, technical assistance, workshops, and training activities that meet the requirements for Categorical Exclusion determination, pursuant to the definition under section 22 CFR 216.2(2)(c)(2). Although the majority of activities fell under the category of categorical exclusion, some elements of the Program's activities are consistent with the "Negative with Determination" (NDWC) recommendation of the PIEE because technical and transaction support may inform eventual construction and rehabilitation interventions for new power generation as well as transmission and distribution grid infrastructure. For program activities classified as NDWC, potential E&S impacts and corresponding mitigation measures are listed in the program's EMMP; further the E&S team performs a thorough review of E&S documentation and completion of a Power Africa Environmental and Social Review Methodology (PESRM) Checklist for WAEP supported transactions. Over the past year, the WAEP team completed 11 PESRM checklist and in the review found did not find substantial E&S impacts to warrant the recommendation of withdrawal of WAEP or Power Africa support for the transactions.

4.1.4. MONITORING, EVALUATION, AND LEARNING (MEL)

Coordination across the Power Africa MEL Ecosystem: To facilitate ongoing collaboration with other Implementing Partners, the WAEP MEL team hosted regular quarterly meetings with the MEL teams on the East African Energy Program (EAEP), SAEP, and NPSP to promote shared learning. Additionally, the WAEP MEL team regularly communicated with the PACO and mission-level MEL teams, including through the PAIS, PATT, and PPR data calls and follow up conversations to confirm quarterly results. The MEL team provided ad-hoc support and information as requested by USAID, throughout the year.

Data Quality Assessment: Two data quality assessments were successfully completed with USAID covering five selected indicators and with Power Africa covering eleven indicators. The DQA teams reviewed the Program's MEL processes, and provided feedback, which the WAEP team is incorporating to improve its MEL processes.

MEL Learning Sessions: The MEL team facilitated learning sessions to ensure the team reflected on to ensure work planning for Year 3 was optimally focused on expected results. These sessions informed the development of the Year 3

4.2. FINANCE AND OPERATIONS

4.2.1. PROGRAM STAFFING

In Year 2, the WAEP team continued a work from home (WFH) posture due to the ongoing COVID-19 pandemic. Despite this, the WAEP team remained effective in delivery of the Year 2 Work Plan.

Following the departure of the Chief of Party (COP) in June 2021, the Deputy Chief of Party (DCOP) stepped in as Acting COP. The WAEP team sought USAID's approval to designate the Acting COP as the permanent COP, which USAID approved on September 16, 2021. During this time, the Finance Manager has overseen project operations. Year 2 saw increases in the size of the staff to fill out key delivery roles. This included hiring a full-time Program Management Office (PMO) Lead to further strengthen the integration of cross-cutting functions across Program activities and expanding the OC2 team to drive connections. In the latter case, the team focused on recruiting CCN staff based in Senegal and Côte d'Ivoire to ensure that we had staff on the ground to drive relationships with counterparts. The majority of the WAEP team's Outcome Leads and Deputy Leads are CCNs resident in Senegal, Togo, Côte d'Ivoire, Guinea and Cameroon.

Please refer to Appendix A for the WAEP Organizational Chart for the Region.

In Year 2 the following Program staffing additions and changes occurred:

Table 2: Long-term Staffing Changes in this Reporting Period

Name	Role	Location	Mobilization Date
Sandra Ricka	Hired as Regional Outcome 1 Deputy Lead	Abidjan, Côte d'Ivoire	November 09 2020
Amadou Bassirou Diallo	Hired as Guinea Country Manager	Conakry, Guinea	December 02, 2020
Nadja Moore	Hired as Program Management Office (PMO) Lead	Accra, Ghana	December 20, 2020
Gabriel Alegrett	Resigned as Finance Manager	Accra, Ghana	January 31, 2021
Chadd Wish	Hired as Finance Manager	Accra, Ghana	February 08, 2021
Kwadwo Akonnor Asah	Hired as Environmental and Social Impact Assessment (ESIA) Specialist	Accra, Ghana	May 04, 2021
Craig VanDevelde	Resigned as Chief of Party	Accra, Ghana	June 18, 2021
Joyce Caitlyn Ocansey	Resigned as Gender & Institutional Capacity Building Specialist	Accra, Ghana	June 30, 2021
Aminata Cisse	Hired as Grid Acceleration Team Member	Dakar, Senegal	July 26, 2021
Abigail Apraku Bondzie	Hired as Communications Specialist	Accra, Ghana	September 01, 2021

STTA mobilized during the period of October 1, 2020, to September 30, 2021

Table 3: Short-term Technical Assistance recruited in this Reporting Period

Name	Role	Location	Mobilization Date
Jose Cavaretti	Contracted as Loss Reduction and Utility Performance Specialist	Remote	February 24, 2021
David Kutelama	Contracted as Densification and Network Extension Specialist	Remote	April 01, 2021
Amnah Hillou	Engaged as Quality Assurance and Communications Specialist – STTA	Remote	April 05, 2021
Elena Ivanova	Engaged as Agile Response Team Member	Remote	May 14, 2021
Souleymane Boene	Contracted as Data Collection Lead (Connexions Plus)	Remote	May 18, 2021
Carol Mulholland	Engaged as Connection Plus Team Lead	Remote	May 18, 2021
Naomi Sochi Umadia	Engaged as Electrification Specialist/OC2 Connexions Plus	Remote	May 18, 2021
Kim Jodie	Engaged as Senior Infrastructure Project Management Specialist (Togo & Benin)	Remote	May 18, 2021
Abiodun Ajayi	Engaged as Infrastructure Project Management Specialist (Togo & Benin)	Remote	May 19, 2021
Jean-Claude Maurice	Contracted as Innovative Finance Specialist	Remote	May 27, 2021
Nadia Crevecoeur	Engaged as Year 3 Work Planning Coordinator	Remote	June 6, 2021
Erin Elizabeth Kelly	Engaged as GIS Expert (OC2 &3)	Remote	June 14, 2021
Fatou Diarissou	Contracted as Grid Access Acceleration Analyst	Dakar, Senegal	July 05, 2021
Amadou Watt	Contracted as Financial Advisor	Dakar, Senegal	July 05, 2021
Neha Parikh	Engaged as Senior Infrastructure Project Management Specialist (Togo & Benin)	Remote	July 07, 2021
Francis Nteku Kyere	Contracted as Project Management Specialist	Accra, Ghana	July 22, 2021
Kofi Antwi Boasiako	Contracted as Resettlement Action Plan Expert	Accra, Ghana	August 25, 2021

4.2.2. SUBCONTRACTING:

The WAEP team implemented the following subcontracting actions to augment the implementation of key activities:

- Following the issuance of an IDIQ subcontract to EnerNex, a U.S. subsidiary of Centro Elettrotecnico Sperimentale Italiano (CESI), at the end of Year 1, the WAEP team issued four task orders to the subcontractor to provide technical assistance to the several counterparts in various technical areas. The counterparts and technical areas are noted below:
    - *WAPP ICC:*
        - Accelerating the establishment of a high-functioning regional market
        - Facilitating accurate and real-time SCADA/EMS Data Exchange between WAPP ICCC, National Control Centers, and Control Area Centers with the West Africa Power Pool
        - Setting up a regional grid code
    - *CI-ENERGIES:*
        - Accelerating WAPP ICC—accelerating the establishment of a high-functioning regional market
        - CI-ENERGIES— utility performance
    - OMVG Support: Supporting the process alignment of OMVG with the WAPP Regional Gride Code and PGW operating agreement.
- The WAEP team issued an IDIQ subcontract to NRECA, a US firm with experience leading electrification efforts across the developing world. Through the two task orders that were issued to the subcontractor, NRECA assessed GIS capabilities of CI-ENERGIES and supported the assessment of the current state of electrifications efforts of PNAAEMC. While future work with PNAAEMC is on hold following the September 5, 2021 coup in Guinea, the GIS assessment will allow the WAEP team to target GIS electrification planning efforts in Côte d'Ivoire in Year 3, which have the potential of yielding 580k in new connections.
- The WAEP team issued a firm-fixed price subcontract to STATInfo SARL, a small Senegalese company, to collect data from households in peri-urban and rural areas of Senegal to help the WAEP team identify and prioritize actions to be implemented to achieve the expected results under the Universal Access Program (PAU) of SENELEC.
- The WAEP team also issued additional task orders to CrossBoundary. The subcontractor continued to provide technical advisory services to identify, advance, and bring to financial close generation projects throughout WAEP regional countries. CrossBoundary leveraged the Program by (i) bringing in its history of success facilitating investments in energy solutions and other private sector investment from West Africa, across the wider Continent, and the globe; and (ii) connecting the WAEP team with leading developers, DFIs, private sector financiers, and other stakeholders necessary for the advancement of projects to financial close.

The WAEP team continued to engage Deloitte Ghana. The subcontractor provides full-time staff who support the WAEP's cross-cutting and administrate functions. In addition to engaging Côte d'Ivoire to provide full-time and part-time staff throughout WAEP's core francophone countries, the WEAP team issued two firm-fixed price task orders to Deloitte Côte d'Ivoire to support the following:

- Assess the current approach of forecasting the energy demand of SENELEC and revamp/develop a new tool and approach for SENELEC to better forecast the energy demand in Senegal by integrating climate aspects and demand control.
- Strengthen tariff regulation for select countries in the Sahel and support SENELEC in reviewing best practices for unbundling.

4.2.3. COST-SAVING MEASURES

The WAEP team achieved costs savings measures through the following avenues:

- Allowances: WAEP proposed a replacement COP already based in Accra, which allowed costs that would go to allowances, mobilization, and future demobilization costs to be repurposed towards technical delivery.
- Labor: Following the approval of Ms. Ufere as WAEP's COP, the WAEP team proposed eliminating the DCOP position to allow for costs that would have been spent on management to be spent on technical delivery.
- Participant Training: While events remained limited because of COVID-19, when events did take place in Accra, the WAEP team held events at the WAEP project office, thereby saving costs that would have been spent on renting a venue.
- Other Direct Costs: Due to the fact that WAEP staff continue to work from home, the Operations team requested and received a rent rebate from the project office landlord. This resulted in a cost savings of US $58,493.72.

Risks, Challenges, and Mitigation Measures

5. RISKS, CHALLENGES, AND MITIGATION MEASURES

This section of the report presents potential risks and challenges identified during this reporting period and WAEP's plans to mitigate the risks or address the challenges.

Table 4: Issues and Constraints Facing WAEP Implementation

Risks and Challenges – Description	Comments / Status / Mitigation
COVID-19 Pandemic	• Staff continue to telework, to observe health protocols as the partial lockdown measures are lifted in Ghana. The technical teams continued to adjust and adapt work plan implementation to guide program implementation during this period. For instances where participation in face-to-face meetings are required, a request process has been implemented for Deloitte US to provide ad hoc approvals. • The WAEP team faced challenges to effectively engage government counterparts because the team could not travel and provide in-person technical assistance. These challenges slowed the WAEP team's support to universal access programs in Guinea, Senegal, and Côte d'Ivoire as most government counterparts could not work virtually. • Some partners such as ERERA and ECREEE lacked the capacity to respond to program directives and requests which slowed down their level of responsiveness. • In Year 2 Q3, the WAEP team traveled to Côte d'Ivoire, Guinea, and Sierra Leone, to support utilities and ministries in eliminating barriers when increasing connections. Holding in-person engagements advanced the WAEP team's ability to implement activities with counterparts significantly.
Political Force Majeure	• Regime changes in Mali and Guinea hampered the ability to pursue MWs and connections projects in those countries. • With the coup in Guinea, the WAEP team received guidance from Guinea Mission and the Program TOCOR, to pause all direct support to the government of Guinea. All potential successes have been put on hold as program partners including AfDB determines their position vis a vis the political situation. WAEP has also closed out its support to PNAAEMC. • The Program does anticipate claiming connections realized that were a direct result of technical assistance by Guinea Country Manger and OC2 Team provided in Year 2, prior to September 5 political coup.
Time-consuming Counterpart Engagement.	• Lengthy engagement processes with counterparts (risk assessment, letters of collaboration, etc.) initially slowed down technical assistance activities. These processes have now been streamlined to drive greater effectiveness.

[4] Previous divider photo: Transmission lines in n Côte d'Ivoire. Photo: PA WAEP

Appendices

APPENDICES

APPENDIX A: ORGANIZATIONAL CHART

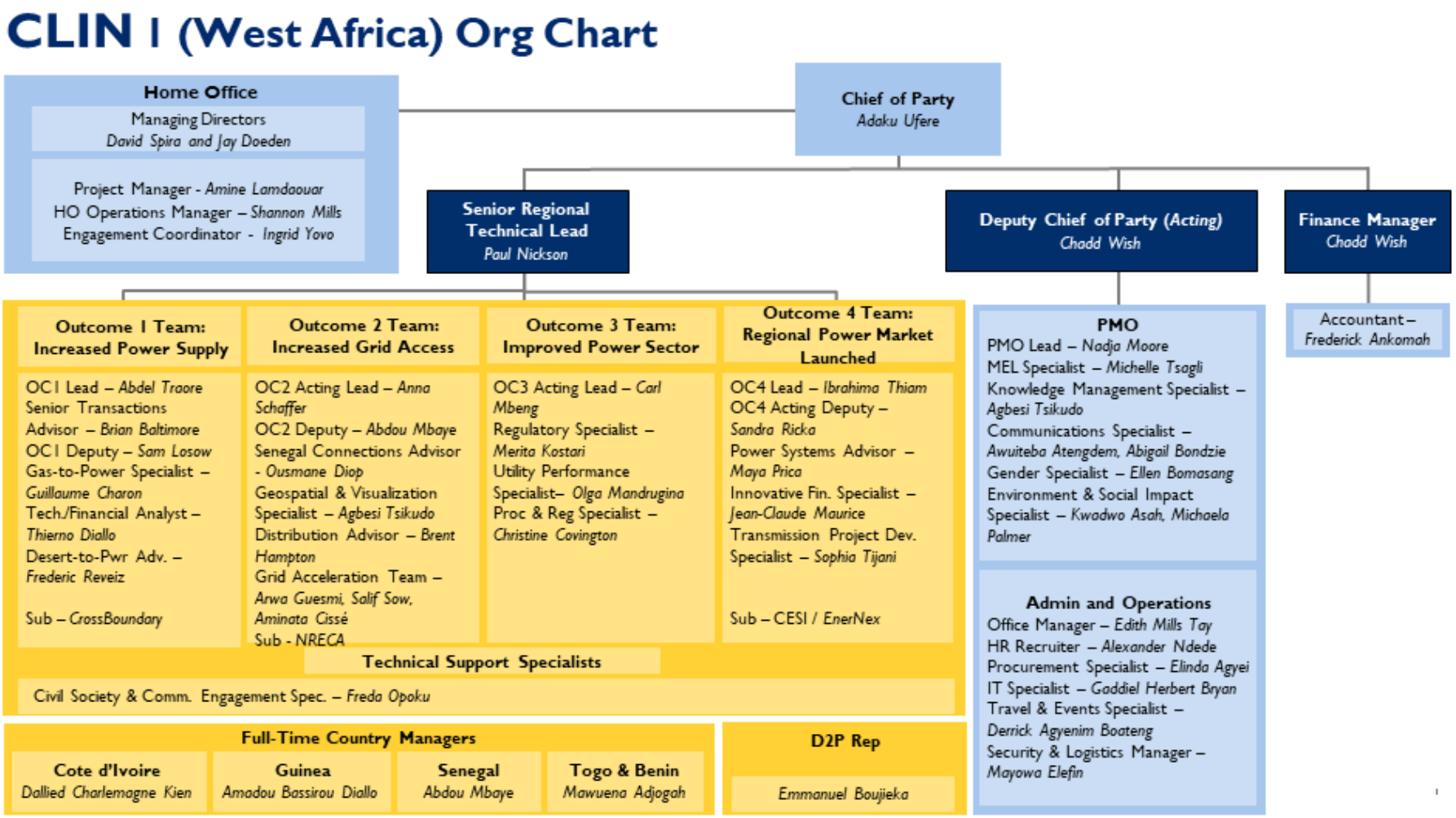


Figure 16: Power Africa WAEP Organizational Chart

APPENDIX B: PROGRAM TRAVEL IN FY21

Due to ongoing restrictions as a result of the COVID-19 pandemic, Program travel halted in April 2020. However, with the opening of Ghana's Airport in September 2020, travel has resumed on a priority basis.

Table 5: Approved and Completed/Ongoing Travel for FY21

Location	Purpose	Timeframe	Name, Role
Accra, Ghana	To serve in his capacity as Security & Logistics Manager	September 21, 2020	Mayowa Elefin, Security & Logistics Manager
Accra, Ghana	Mobilization of family of Mayowa Elefin, Security and Logistics Manager	October 24, 2020	Omolara, Oyindamola, and Oluwaseyi Elefin, family of Mayowa Elefin, Security and Logistics Manager
Accra, Ghana	Mobilization to field office to assume role of Senior Transactions Advisor	December 16, 2020	Brian Baltimore, Senior Transactions Advisor
Accra, Ghana	Mobilization to field office to assume role of Finance Manager	April 17, 2021	Chadd Wish, Finance Manager
Accra, Ghana	Demobilization of family member from project office to the USA	May 25, 2021	Cari-Ann VanDevelde, family of Craig VanDevelde, outgoing Chief of Party
Abidjan, Côte d'Ivoire	To attend counterpart meetings in Abidjan and visit Ivoirian electricity utility CI-Energies, to assess their GIS system, evaluate capabilities and prepare an improvement action plan for delivery.	May 24, 2021- June 4, 2021	Paul Nickson, Senior Regional Technical Lead
Abidjan, Côte d'Ivoire	Engage the CI-Energies power generation team to expand WAEP collaboration/support to IPP transactions. To source potential transactions and/or activities that could be supported under the WAEP, in furtherance of program targets and host government objectives. To engage with DtP Secretariat Director AfDB to advance coordination on new generation projects across the G5 Sahel Countries	May 24, 2021- June 4, 2021	Brian Baltimore, Senior Transactions Advisor
Abidjan, Côte d'Ivoire	To work with Ivorian electricity utility CI-Energies to assess their GIS system, evaluate capabilities and prepare an improvement action plan for delivery.	May 24, 2021- June 4, 2021	Anna Schaffer, Acting Outcome 2 Lead
Abidjan, Côte d'Ivoire	To work with Ivorian electricity utility CI-Energies to assess their GIS system, evaluate capabilities and prepare an improvement action plan for delivery.	May 24, 2021- June 4, 2021	Salif Sow, Grid Access Acceleration Specialist
Abidjan, Côte d'Ivoire	To work with Ivoirian electricity utility CI-Energies to assess their GIS system, evaluate capabilities and prepare an improvement action plan for delivery.	May 24, 2021- June 4, 2021	Abdou Mbaye, Deputy Outcome 2 Lead

Location	Purpose	Timeframe	Name, Role
Freetown, Sierra Leone	To attend meetings with senior officials from the Government of Sierra Leone as well as senior managers from the independent power producers (IPPs).	June 27,2021 – July 9, 2021	Brian Baltimore, Senior Transactions Advisor
Freetown, Sierra Leone	To attend meetings with the Sierra Leonean utility Electricity Distribution and Supply Authority (EDSA)	June 27, 2021 – July 9, 2021	Anna Schaffer, Acting Outcome 2 Lead
Freetown, Sierra Leone	To attend meetings with the Sierra Leonean utility Electricity Distribution and Supply Authority (EDSA)	June 27, 2021 – July 9, 2021	Brent Hampton, Regional Distribution Advisor
Freetown, Sierra Leone	To attend meetings with the Sierra Leonean utility Electricity Distribution and Supply Authority (EDSA)	June 27, 2021 – July 9, 2021	Roger Kayumba, Geospatial Modelling Specialist
Freetown, Sierra Leone	To attend meetings with the Sierra Leonean utility Electricity Distribution and Supply Authority (EDSA)	June 27, 2021 – July 9, 2021	Erin Kelly, GIS Specialist
Kiev, Ukraine	Demobilization from project office to new place of assignment	June 30, 2021	Craig Vandevelde, Outgoing Chief of Party
Conakry, Guinea	To attend counterpart meetings as well as officially meet with the WAEP Guinea Country Manager.	June 13, 2021 – June 26, 2021	Paul Nickson, Senior Regional Technical Lead
Conakry, Guinea	To attend counterpart meetings including meetings with USAID, PNAAEMC, and the Ministry of Energy.	June 13, 2021 – June 26, 2021	Brian Baltimore, Senior Transactions Advisor
Conakry, Guinea	To attend counterpart meetings including meetings with USAID, PNAAEMC, and the Ministry of Energy.	June 13, 2021 – June 26, 2021	Eric Bidong Wakunga, NRECA Subcontractor
Conakry, Guinea	To attend counterpart meetings including meetings with USAID, PNAAEMC, and the Ministry of Energy.	June 13, 2021 – June 26, 2021	Bachir Geagea, NRECA Subcontractor
Seattle, USA	Rest and Recuperation Travel Allowance	August 12, 2021 - September 12, 2021	Anna Schaffer, Acting Outcome 2 Lead, wit
Dakar, Senegal	To meet counterparts to advance gas-to-power projects that are critical to the achievement of program KPIs.	September 6, 2021 – September 12, 2021	Guillaume Charon, Energy Transition Specialist
Nouakchott, Mauritania	To meet counterparts to advance gas-to-power projects that are critical to the achievement of program KPIs.	September 12, 2021 – September 16, 2021	Guillaume Charon, Energy Transition Specialist

APPENDIX C: SUCCESS STORIES

Supporting Senegal's Endeavor for Universal Electricity Access

Photo: Tata Awa from Cherif Lô with her sewing machine after her community was connected to electricity.

Photo credit: PAWAEP

I cannot work if there is no electricity. Power cuts also do not make me productive, especially when there are special occasions in the village that increase the demand for my work. I believe electricity is priceless."

Tata Awa,
Resident of Cherif Lô,
Senegal

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Senegal's Universal Electricity Access Program is aiming to increase household connections by 800,000 by 2025, to bridge the gap in electricity access between rural and urban communities. Power Africa supported SENELEC to roll out nearly 100,000 new connections in the country, providing power to approximately one million[5] people across Senegal.

Power Africa supported SENELEC in conducting an extensive data collection study reaching over 4,000 households across the 14 regions of Senegal in August 2021. This study allowed SENELEC to learn first-hand the challenges these communities face due to a lack of electricity access, as well as to identify the potential benefits of being connected.

In rural villages such as Keur Ndiouga Fall and Tallene in Senegal, the study revealed that inaccessibility to electricity poses a major challenge for small businesses that require power to boost their economic ventures.

Cheikh, a resident of Keur Ndiouga Fall, owns a small fish business but does not have access to electricity. According to Cheikh, "*The cost of not having electricity for my small business is high, I spend 3000 CFA (5.30 USD) on ice and 2000 francs CFA (3.60 USD) on transport every time I have to store the fish to sell.*"

Saye, a housewife in Tallene, wants to venture into owning a business that will allow her to build a savings. Saye's hope is to buy a refrigerator and start a juice and ice cream business as soon as her family gets electricity.

In contrast, the study has revealed that in areas such as Sanghe and Cherif Lô, households that have electricity access are doing relatively well. Abdoulaye, whose house became connected to the grid in 2009 expressed that "*Electricity has greatly improved our living conditions. The most important impact I have seen is on my children. Now, they can study at night.*"

Tata Awa also expanded her sewing business after her workshop was connected to the grid. She went from having one sewing machine in 2013 to four and has now hired three other tailors.

The study is expected to help SENELEC prioritize localities to connect to the grid, evaluate expected connections and resources and optimize the mobilization of funds. As a key outcome, the study identified existing and potential barriers, and suggested recommendations to electricity access and to expanding end-user access.

Power Africa will continue to provide the needed technical support and clear recommendations on electrification planning, management and monitoring to help Senegal achieve its Universal Electrification goal.

[5] Rapport Definitif, Recensement Général de la Population et de l'Habitat, de l'Agriculture et de l'Elevage (RGPHAE), Agence Nationale de la Statistique et de la Démographie, 2013. According to this census report, rural households in Senegal comprise an average of 10 persons per household.

Bridging the Gender Gap in the Energy Sector

Celine Sene,
Participant at the Power Africa-YALI Training
Photo Credit: Celine Sene, 2021

"Women are competent and smart enough to be in jobs where they know they have the skills and capacity to thrive.

– Celine Sene, Logisitics Manager in a solar home systems company, Senegal

Across the globe, there are ongoing efforts to ensure that the energy sector is gender inclusive, and that the disparity in women's inclusiveness and women's leadership in the energy sector, increasingly becomes a thing of the past.

Recognizing the importance of advancing women's participation in the energy sector, Power Africa provided engaging training sessions on key modern energy concepts and leadership skills to 40 young female professionals from across the continent. This was part of the Power Africa-Young Africa Leadership Initiative (YALI) Energy Sector training program, which took place in Dakar, Senegal. The training sessions exposed the women to diverse opportunities within the energy sector and challenged them to aim for leadership roles within the sector.

A participant from this training, Celine Sene, a former Logistics Intern with a solar home systems company in Senegal, has advanced to the role of Logistics Manager. In a conversation with Céline, she shares with great excitement how her career has progressed since the training: '*I am very proud of my current career path after the training. I have been able to move from being only an intern and trainee in my organization to becoming a logistics manager in the same company.*'

Afiwa Amelessodji, another participant, who used to work as a Projects Coordinator has now joined a larger organization as a Project Director.

Afiwa shares that the resource mobilization aspect of the training has been a great asset to her life and work. "*With the resource mobilization capacity building training I received during the Power Africa Program, I was able to pitch for and win two projects for my former organization. This project will help increase access to drinking water via the construction of solar mechanized boreholes in three communes of Togo.*"

For Celine particularly, the training helped to emphasize her belief that there is no role specific to men or women, and that the greatest requirement to be successful at anything is to have the right skill, knowledge and determination.

Power Africa will continue to target and enhance the capacity of women across the region so that they can establish themselves within the energy sector and overcome intimidation in their career journey and progression.

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Power Africa Supports Loan Acquisition for an Additional 645 MWs of Power on Côte d'Ivoire's Grid

Transmission lines and infrastructure in Côte d'Ivoire.

Photo Credit: CI-Energies

"CI-Energies is satisfied with the quality of Power Africa's support on the legal scope during negotiations with lenders for financing the evacuation network associated with Azito IV and Atinkou (Ciprel V) power plants. This successful closure will enable access to the necessary resources to deploy electricity to our end-users and contribute to economic development."

Mamery Serifou
Director of Economic and Financial Studies
Direction Centrale Gestion Finances (DCGF)
CI-ENERGIES

The USAID-funded Power Africa West Africa Energy Program ("WAEP" or "The Program") is helping Côte d'Ivoire increase the power supply while making progress on the country's climate change goals. Through the Program's support, the national utility, Côte d'Ivoire Energies (CI-Energies), secured a USD $127 million loan to finance a 400 kV transmission line, connect 645 MW of power generation to the country's grid and 70km of transmission line.

Energy demand in Côte d'Ivoire remains relatively high and the World Bank forecasts that demand will continue to increase by eight percent annually. The country is a signatory of the Paris Agreement for climate change and, as such, has an objective of greenhouse gas reduction of 28 percent by 2030 (2012 as the baseline). According to the IFC, the necessary investment to reach this objective is estimated at USD $9 billion. To make additional power available to Côte d'Ivoire's citizens, the Program assisted the CI-Energies with applying for a loan from the West African Development Bank (BOAD).

Power Africa supported the legal side of the loan agreement and checked that each step of the agreement was developed under best international practices. The Program's support led to: (i) formalizing the engagement of BOAD as lead loan arranger and first disbursement operator (ii) clearing all the condition precedents to make CI-Energies compliant with BOAD requirements (iii) arranging the syndication of other banks (ECOWAS Bank for Investment and Development and Atlantic Bank of Côte d'Ivoire).

This intervention of Power Africa eventually unlocked a loan of USD $127 million and was signed on September 22, 2020. The loan will cover the cost of engineering and deploying the transmission line to connect 255 MW from the power generation facility Azito IV and 390 MW from the CIPREL V both of which would otherwise have been stranded assets.

Power Africa will continue to collaborate with counterparts on projects to bring additional, affordable energy to the region.

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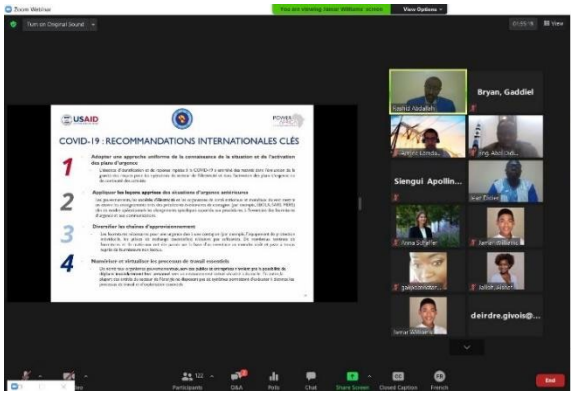
WAEP Partners with APUA to Bring Successful COVID-19 Webinar Series to West African Utilities



WAEP COVID-19 Webinar 1, Impact of COVID-19 on the Power Sector in West Africa

Photo credit: PA WAEP

"I have appreciated the team spirit of Organizers and all involved in Webinars. It was a great experience; my commitment is to improve and contribute better to face various challenges in energy System."

Webinar 2: Communication within the Utility, Hamadou Bivoung, Technical Advisor to the CEO, ENEO

"Thank you for organizing this very useful webinar to understand the challenges arising from Covid-19 in electricity companies in Africa"

Webinar 4: Customer Engagement Strategies, attendee response to feedback survey

"Very interesting training session with lot of materials for utilities to use for their preparedness"

Webinar 3: Business Continuity Planning, attendee response to feedback survey

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In the aftermath of COVID-19's unprecedent impact on the African Power Sector, the WAEP team partnered with the Association of Power Utilities of Africa (APUA) to bring a five-part webinar series aimed towards enabling West African Utilities to overcome the impacts of the pandemic. The webinars aired Tuesday mornings at 11am GMT between October 2020 and December 2020.

The webinars were centered on five key areas: the impact of COVID-19 on the West Africa's Power sector, Internal crises communications, Business continuity planning, shifts in customer engagement practices, and methods of financial planning to mitigate negative impacts of COVID-19.

Before proposing ways to resolve issues exacerbated by COVID-19, it was important to explore the impact of COVID-19 on the sector. Research and poll results from utilities revealed working from home was the most difficult internal challenge utilities felt they had to overcome, especially since this required a successful internal communications strategy. Polls also revealed that 95% of utilities felt their financial health was adversely affected by COVID-19. The Business Continuity Planning and Financial Planning webinars sought to target these issues by presenting crisis planning strategies and alternative channels for generating funds. The fourth webinar, focused on Customer Engagement Strategies, also helped service providers in navigating through financial recovery by facilitating discussions around effective payment collection methods, including mobile payments, to help utilities secure more revenue and cut loses.

The WAEP team sought to accommodate French, English, and Portuguese language speakers by conducting Webinars in French, simultaneously translating to English through Zoom interpretation channels, and sending webinar materials in English, French and Portuguese.

The series saw nearly 500 participants with over 20% female attendees across the five-webinars, including 16+ utilities and some Power Sector training institutions across the African continent.

The Program will continue to seek opportunities to develop useful training and toolkits that will further enable utilities to realize their mission. In the immediate future, the team is planning a virtual panel on Power Purchase Agreements (PPA) Negotiation and Management in January 2022 to help utilities in the region address challenges of PPA negotiations.

Power Africa Partners with APUA to Host Webinar on Managing Power Purchase Agreements amid COVID-19

WAEP - APUA COVID-19 Webinar 6, Power Purchase Agreements Negotiation and Management

Photo credit: PA WAEP

"I have appreciated the team spirit of Organizers and all involved in Webinar. It was a great experience; my commitment is to improve and contribute better to face various challenges in energy System."

Hamadou Bivoung,

Technical Advisor to the CEO, ENEO

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In the aftermath of COVID-19's unprecedent impact on the African Power Sector, PA WAEP partnered with APUA to conduct a webinar on PPAs to African utilities. The 90-minute session aired on January 19, 2021.

The webinar brought together four panelists from the West and Central Africa power industry, moderated by Wale Shonibare, Director of Energy Financial Solutions, Policy and Regulations at the Africa Development Bank. The panel consisted of a diverse group of experts who offered a range of perspectives. Panelists included: Mohamed R Badissy, the Senior Advisor of Energy and Finance from the U.S Department of Commerce; Ryan Ketchum, a partner at Hunton Andrews Kurth; Steven Wynter, a Director at Gridflex; and Hamadou Bivoung, the Technical Advisor of ENEO Cameroon's CEO, who shared Cameroon's experience with electrification and demand decrease due to a fall in revenue with the onset of COVID-19.

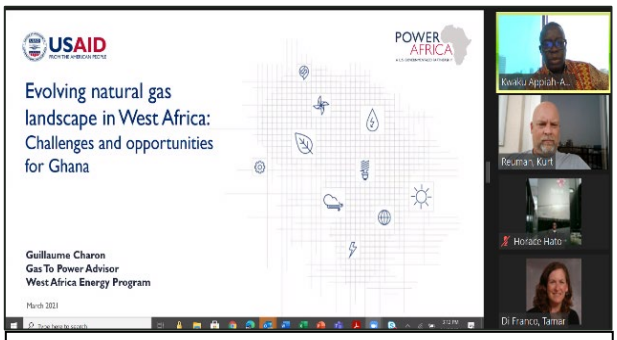
The topic was a highly requested from attendees of previous sessions in 2020. Panel discussions centered on varied concerns related to PPA including the views of force majeur clauses in PPAs and opportunities for African governments to mitigate impacts on the energy market. Mr. Badissy provided insights on the maturation of the African market and the role of regulators in amending PPAs to adjust for future disruptions.

Despite their varied backgrounds, one message rang clear from the presenters: an interconnected power market is a key tool for resilience against major disruptors.

Due to a majority anglophone panel, the webinar was held in English, with live French interpreters. Despite the switch from French as the primary language in previous webinars, the session still saw 158 participants with over 25% female attendees. A survey was posted at the end of the panel, and 97% of attendees voted they were "Likely" or "Strongly likely" to recommend the webinar.

WAEP will continue to seek opportunities to develop useful training and toolkits that will further enable utilities to realize their mission.

Power Africa Shares Expertise on West Africa's Gas Sector to Government Officials in Ghana



WAEP webinar on West Africa's evolving Gas landscape.

Photo Credit: Power Africa

The information shared was beneficial to especially those of us engaged in power supply infrastructure expansion planning. This would immensely improve the quality of our work-especially regional expansion planning (power export).

Ing. Kassim Abubakar,
Power System Planning Engineer,
Ghana Grid Company Limited.

The gas landscape in West Africa is changing rapidly and keeping up with the changes can be challenging for Government officials. Recent offshore gas discoveries, development of Liquified Natural Gas (LNG) import and export terminals, and the changes occurring in the power market as power generation moves from liquid fuels to natural gas are all key to understanding the energy context in West Africa.

As Ghana's gas and gas-to-power sector matures, the Government has begun to reflect on how Ghana fits into the regional gas and power markets, and Power Africa has been providing critical advice and support as part of that journey. To aid Ghana in its planning, on March 17, 2021, Power Africa's West Africa Energy Program hosted a virtual workshop for more than 40 Ghanaian government representatives.

Participants included representatives from the Office of the Vice President, the Ministries of Finance and Energy, Ghana National Petroleum Corporation, Ghana National Gas Company, VRA, ECG, and the EC. The Power Africa team presented on recent developments in regional offshore gas discoveries, conversion of generation facilities from heavy fuel oil to gas, possible LNG projects, and much more. The team also provided case studies from Senegal, Sierra Leone, Guinea, Cote d'Ivoire, Nigeria, Togo, Benin, and highlighted changes that have recently emerged in West Africa's energy dynamic.

This regional context will help the Government of Ghana develop its plan for domestic and imported gas use and identify potential export markets for gas and power by using empirical evidence to guide decision making.

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Utility and Regulatory Needs Assessment Tool

The WAEP team working with energy sector counterparts in Sierra Leone on defining capacity building support based on the NAST assessment.

Photo credit: PA WAEP

The WAEP team working with utility counterparts on defining technical assistance based on the NAST assessment.

Photo credit: PA WAEP

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In Year 1, the WAEP team developed and deployed a comprehensive, custom-built needs assessment survey tool (NAST). This tool was used to assess the need for technical assistance and training for utilities, regulators, and priority transmission line Project Management Units (PMUs) across 22 countries of West and Central Africa. The purpose of the NAST was to identify and prioritize WAEP's technical assistance and capacity building to improve utility performance, strengthen regulatory systems and accelerate regional energy trading through improved operational effectiveness of the PMUs. The WAEP team developed and deployed utility and PMU NASTs in cooperation with WAPP. ERERA was instrumental in the facilitation of the regulatory NAST. WAEP provided the opportunity to complete the NAST survey for the 21 regional utilities, out of which 13 companies responded. Out of 22 regulators, 14 responded. All six PMUs that were part the NAST survey provided responses.

The NAST responses received were informative and accurately pinpointed where WAEP's support could provide the greatest impact. The WAEP team went through a rigorous validation process to confirm the survey results, establish priorities of support for utilities and regulators, develop the shortlist of entities whose identified needs aligned with WAEP's objectives and define entity-specific SOWs for the provision of sustainable and resiliency-focused assistance. At this time, four utilities (EDSA, ELECTRA, SONABEL, and NIGELEC) and 11 regulators have been shortlisted for technical support. WAEP is also currently working with all six priority PMUs. To ensure broad knowledge sharing and coordination, the WAEP team distributed the NAST validation reports to WAPP and ERERA and is organizing a webinar series to present the NAST results to Power Africa implementors and Development Partners.

"We appreciate…the possibility for technical assistance for public electricity distribution utilities. Cape Verde is currently undergoing an important reform program in the electricity sector within the framework of the national program for energy sustainability… and the good performance of the transmission and distribution component is a critical element of the program. Therefore, we are fully interested in participating in this [NAST exercise] program for utility performance improvement"

Rito Évora, Director, Ministry of
Industry, Commerce and Energy, Cape Verde

TransCo: Commissioning of the Man-Monrovia Line

Transmission Line (Line Man -Yekepa)
Photo credit: PA WAEP

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The CLSG project was initiated by WAPP with the aim of interconnecting the four countries of Cote d'Ivoire, Liberia, Sierra Leone and Guinea. This project involves the construction of the 498 km Man-Monrovia line, which starts in Cote d'Ivoire, cuts through Liberia and Sierra Leone, and ends in Guinea. The line will provide stable and affordable electricity to households along the Mano River Basin.

The WAEP team provided technical assistance to TransCo, the regional transmission company, for the construction and powering of the 225 KV Man-Monrovia line. This assistance included: (i) developing their corporate strategy with an actional roadmap, (ii) utilizing advanced, high-impact financial technology from construction to commercialization to endure financial viability and sustainable operation and (iii) implementing a state-of-the-art cloud Enterprise Resource Planning (ERP) system. The Program's support enabled timely business insights, improved operational efficiencies, and enhanced capacity and tools that enable innovation that benefit employees and business partners. The WAEP team also provided support to TRANSCO in organization restructuring, change management, and new business processes to facilitate their transition from a construction to a transmission company in order to implement projects such as the CLSG.

The project will provide increased access to energy in both Cote d'Ivoire and Libera. In total, the Man-Monrovia line will connect: (i) 1,874 households in Cote d'Ivoire and (ii) in Liberia: 136 villages; 340,066 inhabitants; 60,726 households; 161 schools and 53 health centers.

Power Africa remains committed to supporting increased access to energy across the region.

APPENDIX D: TECHNICAL AND CONTRACTUAL DELIVERABLES SUBMITTED

Table 6: Deliverables submitted from October 2020 to September 30, 2021

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
September Monthly Report	Program progress update for September 2020	October 8, 2020 October 22, 2020	October 30, 2020
Loss Reduction Technical Assistance Presentation for Sierra Leone EDSA	This is a presentation of proposed technical assistance to the utility in Sierra Leone, EDSA	October 16, 2020	-
Grants Manual for the USAID West Africa Energy Program (WAEP)	It provides the overall compliance framework and guidance the team will utilize in managing the Grants program for the USAID West Africa Energy Program.	October 13, 2020 October 29, 2020 January 19, 2021	-
Prepared but not submitted Report on Evaluation of DRC Power Sector and Legal Framework (in French and in English)	Work commenced in accordance with approved Y1WP (Y1.C1.IR3.1-T1.a DRC), but subsequently halted on instructions from USAID.	October 21, 2020	-
Prepared but not submitted Road Map to Operationalization of ARE	Work commenced in accordance with approved Y1WP, but subsequently halted on instructions from USAID.	October 21, 2020	
IPP Enabling Environment SOW	This SOW outlines WAEP OC1 and OC3 teams' approach to supporting the enabling environment for IPP development in select countries for Year 2. The intention will be that this approach and the toolkits to be built in Year 2 can be scaled to additional countries in Years 3 and 4 This SOW is built from the findings and conclusions of the IPP PPP Regional Landscape Assessment Summary Report	October 30, 2020	-
PPP/IPP Regional Assessment and Support Recommendations	This PDF includes a 10-page report on regional findings concerning enabling environment for PPP and IPPs, as well as a framework for supporting countries according to level of maturity of their enabling environment for IPP development	October 30, 2020	-
PPP/IPP Enabling Environment Country Assessment Briefs	The team developed assessments for 12 countries in total and shared six with USAID. These six countries are where we will focus implementation in Year 2	October 30, 2020	-
Terms of Reference for WAEP Support to Sierra Leone EDSA	After buy-in from EDSA, this is a more detailed SOW outlining WAEP technical assistance to EDSA for next two years focused primarily on loss reduction	October 30, 2020	-
CLIN 1 Year 1 Annual Report		October 30, 2020 December 23, 2020 December 27, 2020 January 23, 2021	February 9, 2021

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
Revised CLIN 1- Activity Monitoring, Evaluation & Learning Plan	Overall approach to monitoring and evaluating activity targets using agreed-upon indicators	November 6, 2020 December 15, 2020	January 19, 2021
Webinar Presentation in French and English of Webinar #3 on Business Impact Assessment and Continuity Planning	Provide utilities with knowledge and tools to develop/revise their business continuity plans	November 3, 2020	-
October Monthly Report	Program progress update for October 2020	November 6, 2020 November 17, 2020 November 19, 2020	November 20, 2020
Management and Staffing Plan	Overall management approach for the implementation of its Statement of Work and the Annual Work Plan	November 6, 2020 November 30	December 1, 2020
Communication Strategy – Resubmission	Multi-year plan for producing success stories and other communications materials that summarize the impact of the interventions	November 6, 2020	November 30, 2020
Webinar Presentation in French and English of Webinar #4 on Customer Engagement during COVID-19	Discuss methods and channels to effectively engage clients and improve client relations	November 10, 2020	-
Branding Implementation Plan and Marking Plan - Resubmission	Multi-year plan for ensuring standardized, USAID and Power Africa policy-compliant branding and marking on the full spectrum of communications products and deliverables	November 10, 2020 November 25, 2020	November 30, 2020
WAEP Year 2 Procurement Plan	List of Year 2 Commodities Procurement and Budget	October 14, 2020 November 13, 2020 November 30, 2021	January 14, 2021
Gender Strategy and Gender Integration Plan - Resubmission	Four-year gender strategy and gender integration plan to track integration of gender issues by activity	November 16, 2020 November 25, 2020	November 27, 2020
Webinar Presentation in French and English of Webinar #5 on Assisting in Financial Planning for Utilities Negatively Impacted by COVID-19	Provide tools and financial planning strategies to aid utilities' recovery from financial losses caused by COVID-19	November 17, 2020	-
SLEWRC NAST WAEP validation report	This report is based on the responses of Sierra Leone Electricity and Water Regulatory Commission (SLEWRC) in terms of technical assistance and capacity building needs. We propose to validate this report with SLEWRC and finalize it. The report will be shared with ERERA, who is looking to have a landscape analysis of needs of regulators. We would also seek to share the report with AfDB	November 17, 2020	-
SLEWRC Pitch Deck of Proposed Technical Assistance	Present the summary of potential technical assistance and capacity building activities that	November 17, 2020	-

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
	WAEP could pursue in strengthening regulators		
EDSA NAST WAEP Validation Report	This report is based on the responses of Electricity Distribution and Supply Authority (EDSA) in terms of technical assistance and capacity building needs. We propose to validate this report with EDSA and finalize it. The report will be shared with WAPP, who is looking to have a landscape analysis of needs of utilities. We would also seek to share the report with APUA if permitted by EDSA	November 17, 2020	-
Quarterly Accrual Report	Financial accruals and projections for the upcoming quarter	December 6, 2020	-
November Monthly Report	Program progress update for November 2020	December 8, 2020 December 18, 2020	December 21, 2020
Summary of Utility NAST Regional Findings presented to WAPP	Presentation of key findings from Utility NAST Deployment to WAPP	December 13, 2020	-
Donor Coordination Matrix	A list of 103 donor projects and includes details, amounts and contact persons	December 15, 2020	-
Revised CLIN 1 Year 2 Work Plan	Revised program work plan	December 17, 2020 January 11, 2021	February 16, 2021
Report on the energy demand of the Guinea mining industry	Assessment of the energy demand in the Guinea Mining sector	December 18, 2020	-
Summary of Regulatory NAST Regional Findings presented to ERERA	Presentation of key findings from Utility NAST Deployment to ERERA	December 18, 2020	-
Revised Environmental Mitigation and Monitoring Plan (EMMP)	Documents how the Contractor's proposed activities and interventions will comply with Section 117 of the Foreign Assistance Act of 1961	December 15, 2020 December 24, 2020 January 13, 2021	January 28, 2021
December Monthly Report	Program progress update for December 2020	January 11, 2021 January 20, 2021	January 21, 2021
CLIN 1 Revised Year 2 Work Plan	Detailed Year 2 work plan for all outcome activities	January 11, 2021	February 16, 2021
WAEP Year 1 Work plan Annex 6: Country Strategies - Resubmission	Overview of WAEPs proposed approach for engagement in specific countries	January 28, 2021	February 2, 2021
CLIN 1 FY 2021 Quarter 1 Progress Report	Report covering implementation of technical and operational activities over the period	January 30, 2021 February 22, 2021 March 25, 2021	March 27, 2021
January Monthly Report	Program progress update for January 2021	February 5, 2021 February 18, 2021 February 22, 2021	March 1, 2021
Monthly Progress Report - February 2021	Program progress update for February 2021	March 5, 2021 March 30, 2021	March 31, 2021

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
Webinar Series Training Evaluation Report	A training report that captures the summary of the activity, lessons learned, and training hours implemented.	March 22, 2021	-
COVID Redirect Final Report	This report represents a closeout status of CLIN 1 efforts on the COVID Redirect	March 22, 2021	-
Monthly Progress Report - March 2021 - Submission	Project progress update for March 2021	April 9, 2021 April 29, 2021 July 5, 2021	July 23, 2021
Energy Demand Forecast in Senegal reports phase 1	The WAEP team conducted a diagnostic assessment of existing tool and issued an inception report and another report on key recommendations for improvement. Phase 2 was started in last week of April	April 22, 2021	-
FY21 Q2 Results in PAIS	CLIN 1 indicator-specific data reported in Q2	April 27, 2021	April 28, 2021
CLIN 1 Quarterly Progress Report - FY 2021 Q2	Report covering implementation of technical and operational activities over the period	April 30, 2021 July 5, 2021 July 27, 2021	July 28, 2021
WAEP Environmental and Social Review Methodology Checklists	Power Africa Environmental and Social Review Methodology checklists ("PESRM Checklists") for transactions (Djermaya Solar, Kinguele hydro, , CIPREL V transmission line, Bumbuna II Hydro, Azito IV, Malicounda HFO/gas and, Ciprel V IPP)	April 30, 2021	-
Monthly Progress Report - April 2021	Project progress update for April 2021	May 10, 2021 June 2, 2021	June 17, 2021
Kickoff Meeting minutes - PAU	These minutes reflect buy-in and consensus between WAEP and Senelec to coordinate on advancing the Universal Access Program (PAU) to facilitate 700,000 connections. This document acknowledged agreement between WAEP and SENELEC to engage collaboratively to advance the universal access program.	May 11, 2021	-
CI-Energies GIS Diagnostic Timeline and Estimated Work Plan; Diagnostic Materials	These include the GIS audit plan and GIS User Interview guide and questionnaire for the needs assessment of the support to CI-Energies	May 25, 2021	-
Draft Terms of Reference for PSP In Bong County Electricity Operations	The document is a draft to be used to guide discussions for finalization in workshops between WAEP and LEC. This document was also shared with the USAID Liberia Mission for their feedback.	May 27, 2021	-
Monthly Progress Report - May 2021	Project progress update for May 2021	June 7, 2021 July 5, 2021 July 15, 2021 July 27, 2021	July 28, 2021

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
Trip Report - Côte d'Ivoire June 2021	Trip report on the visit to Côte d'Ivoire to audit the GIS capabilities of CI-Energies	June 10, 2021	-
Draft GIS Diagnostic Report (PowerPoint Presentation)	PowerPoint Presentation showing results from the GIS Audit in Côte d'Ivoire	June 10, 2021	-
WAEP Regulator NAST Reports - SLEWRC Sierra Leone	Report detailing all the needs and possible WAEP support to SLEWRC Sierra Leone	June 18, 2021	-
WAEP Regulator NAST Reports - ARE DRC	Report detailing all the needs and possible WAEP support to ARE DRC	June 18, 2021	-
WAEP Regulator NAST Reports - LERC Liberia	Report detailing all the needs and possible WAEP support to LERC Liberia	June 18, 2021	-
WAEP Regulator NAST Reports - AREE Guinea	Report detailing all the needs and possible WAEP support to AREE Guinea	June 18, 2021	-
WAEP Regulator NAST Reports - ARSE Chad	Report detailing all the needs and possible WAEP support to ARSE Chad	June 18, 2021	-
WAEP Regulator NAST Reports - CRSE Senegal	Report detailing all the needs and possible WAEP support to CRSE	June 18, 2021	-
WAEP Regulator NAST Reports - AREE Benin	Report detailing all the needs and possible WAEP support to AREE Benin	June 18, 2021	-
WAEP Regulator NAST Reports - ARSEE Gabon	Report detailing all the needs and possible WAEP support to ARSE Gabon	June 18, 2021	-
WAEP Regulator NAST Reports - ARSE Togo	Report detailing all the needs and possible WAEP support to ARSE Togo	June 18, 2021	-
WAEP Regulator NAST Reports - ARSE NIGER	Report detailing all the needs and possible WAEP support to ARSE	June 18, 2021	-
Guinea Credit Enhancement Options for Unlocking Project Capital (French Language version)	A PowerPoint Presentation detailing innovative sources of capital for Guinea	June 21, 2021	-
A List of WAEP Pipeline Projects that could benefit from DFI support	A list of prospective projects requiring DFI financing	June 23, 2021	-
Validated Utility NAST Reports - LEC, Liberia	A report detailing all the needs and possible WAEP support to LEC	June 24, 2021	-
Validated Utility NAST Reports - NAWEC, the Gambia	A report detailing all the needs and possible WAEP support to NAWEC	June 24, 2021	-
Utility NAST Regional Results Presentation	A PowerPoint Presentation showing findings from utility NAST and WAEP support to utilities	June 24, 2021	-
WAEP CLIN 1 Achievements in Year 2	CLIN 1 achievements for Year 2, from July 2020 to July 2021	July 6, 2021 August 6, 2021	
Evaluation of Power Planning Software Alternatives	This report is a deliverable for Task 3 – Harmonizing Regional and National Power System Planning, Subtask 3.3 – Evaluation of Power Planning Software Alternatives	July 7, 2021	-

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
Recommendations for Power Planning Tools	This report is a deliverable for Task 3 – Harmonizing Regional and National Power System Planning, Subtask 3.4 - Recommendations for Power Planning Tools	July 7, 2021	
WAPP ICC Reports	Deliverables for the approved Y2 activity Y2.C1.IR4.1-T1.a REG "Harmonize regional and national power planning through shared planning and analysis tools."	July 7, 2021	-
WAEP Monthly Progress Report for June 2021	Project progress update for June 2021	July 8, 2021 July 28, 2021 August 10, 2021	August 11, 2021
WAEP Regional Achievements – June 2021	Significant activity implementation milestones achieved in June 2021	July 8, 2021	August 11, 2021
Guinea Trip Report	Trip Report for WAEP Team Travel to Conakry, Guinea, June 16 – July 2, 201	July 8, 2021	-
Diagnostic Report presented to PNAAEMC	A Diagnostic Report on the GIS Set up of PNAAEMC	July 8, 2021	-
Sierra Leone Trip Report	Trip Report for WAEP Team Travel to Freetown, Sierra Leone, June 28 – July 9, 2021	July 15, 2021	July 27, 2021
WAEP Findings and Proposed Support for Loss Reduction at EDSA	A PowerPoint Presentation on findings and proposed support to EDSA	July 15, 2021	July 27, 2021
Prosper Africa Data Request		July 19, 2021	-
Portfolio Review presentation for WAEP CLIN 1	A PowerPoint presentation on results achieved to date, opportunities, challenges and other key performance metrics about the WAEP CLIN 1 Program	July 22, 2021 August 6, 2021	-
CLIN 1 Q3 Results reported in PAIS	Request to review CLIN 1 FY2021 Quarter 3 results to be entered in PAIS	July 23, 2021	July 25, 2021
Requested Monthly Connections Documentation - Côte d'Ivoire	Documentation confirming connections from CI Energies	July 29, 2021 July 30, 2021	-
CLIN 1 FY 2021 Quarter 3 Progress Report	Report covering implementation of technical and operational activities over the period	July 30, 2021 August 24, 2021 August 25, 2021	August 25 2021
WAEP Regional Achievements	Significant activity implementation milestones achieved in Quarter 3 FY2021	July 30, 2021	
Monthly progress Report - July 2021 and Regional Achievements	Program progress update and results for July 2021	August 9, 2021 August 26, 2021	August 30, 2021
WAEP - Energy Storage Request for Information	List of Energy Storage projects and programs in Sub Saharan Africa	August 10, 2021	-

Deliverable Title	Deliverable Description	Date of Submission	Approval Date
WAEP CLIN 1 - Year 3 Work Plan Submission	Detailed Year 3 work plan for all outcome activities	September 1, 2021 September 15, 2021 September 20, 2021	-
Updated CLIN 1 Annex 2: Environmental Mitigation & Monitoring Plan (EMMP)	Documents how the Contractor's proposed activities and interventions will comply with Section 117 of the Foreign Assistance Act of 1961	September 1, 2021 September 15, 2021	-
Regional Country Strategies	Overview of WAEPs proposed approach for engagement in specific countries	September 1, 2021 September 15, 2021	-
Year 3 Procurement Plan	List of Year 3 Commodities Procurement and Budget	September 1, 2021 September 15, 2021	-
Year 3 Work Plan Budget	Program's Year 3 budget	September 1, 2021 September 15, 2021 September 20, 2021	-
WAEP Monthly Progress Report - August 2021	Project progress update for August 2021	September 9, 2021 September 22, 2021	September 24, 2021
WAEP Regional Highlights – August 2021	Significant activity implementation milestones achieved in August 2021	September 9, 2021	September 24, 2021
CLIN 1 Accrual Report for Q4 FY2021	Report covering financial status, accruals over period, and forecasted expenditures	September 9, 2021	-
Presentation on Decarbonizing Power Generation	A presentation about WAEP teams' strategy to help decarbonize power generation in West Africa, and accelerate the transition from fossil fuels to renewables	July 30, 2021 September 28, 2021	-
WAEP Senegal and Mauritania Trip Report	Trip Report for WAEP Team Travel to Dakar, Senegal and Nouakchott, Mauritania, September 7th – September 17th, 2021	September 29, 2021	-
Review of AfDB's funding proposal to Green Climate Fund (GCF)	A one-page review of AfDB's funding proposal to GCF	September 29, 2021	-
Nine-Month Recovery Plan Presentation	Plan to build on pipeline projects and efforts in the first nine months of Year 3.	September 3, 2021 September 19, 2021 September 27, 2021	-

APPENDIX E: DETAILED ACTIVITY PROGRESS

The table below provides a status overview of WAEP activities in accordance with the approved Regional Year 2 Work Plan. This table tracks the status of activities and highlights any activity changes, timing changes or other major items related to activities that the WAEP team would like to amend for the period. All activities crossed out have been removed from the Work Plan and activities highlighted in red are amended/newly added activities to the Year 2 WAEP Work Plan.

Outcome 1

Table 7: Outcome 1- Activities and Results

Activity	Activity Manager(s)	Start/End Dates	Deliverable(s)	Status
Intervention 1.1				
Collaborate with AfDB on DTP; activity to increase MWs and connections Y2.C1.IR1.1-T1.a REG	OC 1 Lead	Y2 Q1 – Y4 Q4	Transaction advisory for bidding and negotiation, power sector planning and project oversight	In progress: The WAEP team is providing transaction assistance to the 40 MW project (including 32MW/8MWh storage) in Chad. New opportunities have been identified in Burkina Faso and Mauritania, and Niger has confirmed willingness to receive support from the Program. WAEP assisted the AfDB prepare a proposal to the Green Climate Fund which resulted in a $150 million grant received for DTP.
Transaction advisory support to relevant stakeholders in Cameroon Y2.C1.IR1.1-T2.a CMR	Senior Transaction Advisor	Y2 Q2 – Y4 Q4	Further developed pipeline of projects and transaction advisory support	In progress: The WAEP team engaged JCM Power to provide transaction advisory assistance on the Mbalmaylo project (72MW- Hydro). The project is presently on hold as JCM is selling its project development rights to another sponsor. The WAEP team has engaged Orion Solaire to provide transaction advisory assistance on the N'Gaoundéré project (30MW – Hydro). WAEP signed a SoW with the sponsor on 11th May following QTAT approval
Transaction advisory support to relevant stakeholders in Sierra Leone Y2.C1.IR1.1-T2.b SLE	Senior Transaction Advisor	Y2 Q1 – Y4 Q4	Further developed pipeline and transaction advisory support	In Progress: The WAEP team is actively supporting two IPPs in Sierra Leone: (1) Western Area Power Generation Project (85MW-GtP) and (II) Betmai Project (27MW - RoR Hydro). Both projects have approved

				QTATs and SoWs. WAEP has delivered the majority of the defined scope.
Transaction advisory support to relevant stakeholders in The Gambia Y2.C1.IR1.1-T2.d GMB	Senior Transaction Advisor	Y2 Q2 – Y2 Q4	Transaction advisory support for IPP development	Not started: Per USAID guidance, WAEP has not engaged the Government of Gambia to support generation projects. The GoG has issued tenders for two solar PV projects which WAEP is monitoring for potential support to be provided to the awarded bidder.
Transaction advisory support to relevant stakeholders in Benin Y2.C1.IR1.1-T2.e BEN	Senior Transaction Advisor	Y2 Q2 – Y2 Q4	Further developed pipeline and transaction advisory support	In progress: The WAEP team has engaged the Benin Electricity Production Company (EPC) to support on four IPP projects including solar PV and energy transition support. The preferred bidder of the Government of Benin tendered project (50MW-Solar PV) is being supported under the MCC Benin Compact II. The WAEP team has defined a SOW with the developer, which includes assistance in identifying and vetting EPC and Operating and Maintenance (O&M) firms.
Transaction advisory support to relevant stakeholders in Senegal Y2.C1.IR1.1-T2.f SEN	Senior Transaction Advisor	Y2 Q1 – Y4 Q4	Further developed pipeline and transaction advisory support	In progress: Cap Des Biches (300MW – GtP): The WAEP team is supporting the Africa Finance Corporation (AFC) as the main lender of the 300MW Cap des Biches IPP. The WAEP team shared with the counterpart a draft SOW on conducting a supply assessment, with a final SOW expected to be agreed upon by end of April 2021. The SOW recommends a supply assessment as well as support in the Partial Risk Guarantee (PRG) negotiation. Tobene (115MW-GtP): The WAEP team is supporting the Tobene 115MW project through Africa 50. On 19th March 2021, the WAEP team shared the proposed draft Gas Supply Assessment with Africa 50 and other relevant shareholders, such as Azura and Actis - Growth and Emerging Market Investors. The project sponsor and shareholders are reviewing the draft report. Potou Project (50 MW-Wind): In January 2021, the WAEP team prepared a condensed financial modeling training plan to enable Enertec to manipulate the model and update it as the Potou sponsor moves forward in the

				development stages. WAEP is currently identifying equity investment options for the project sponsors.
Intervention 1.2				
Provide technical assistance to the Senegalese Ministry of Energy, CRSE and the utility in integrated resources planning Y2.C1.IR1.2-T1.a SEN	Power System Planner and Senior Transaction Advisor	Y2 Q2 – Y2 Q4	Finalized SOW and delivery	On Hold: The WAEP team was ready to commence activity delivery in Q3. However, budget restrictions put the project on hold until further notice. The WAEP Team is framing the most appropriate message to convey to the counterpart. The support was to meet the Master Plan targets of OC1.
Identify countries where master plans are needed or under development and align with country strategies. Prepare proposed technical assistance offers for buy-in with target countries where TA is needed for master planning Y2.C1.IR1.2-T1.b REG	Power System Planner and OC1 Deputy	Y2 Q1 – Y2 Q4	• Finalized SOW and actions taken on initial phases of scope to provide TA for master planning in three countries • Master plan for at least three countries • Five countries identified master plans over LOP	In progress: The WAEP team identified countries (Senegal, Guinea etc). to commence activity delivery. The delivery was completed in Senegal and Guinea. Final report for Senegal is under review before submission and training on tools is scheduled for 2-4 November 2021.
Support the revision of Guinea master plan with updates based on mining demand assessment conducted in Year 1 Y2.C1.IR1.2-T1.c GIN	Power System Planner	Y2 Q1 – Y2 Q4	Annex to master plan with revisions considering results of mining study	In progress: The report of the mining study has been submitted to the Minister of Energy. It was expected that the Minister will formally confirm the central role of the Mining study in the revision of the Master Plan of Guinea. Given current context in the country, the WAEP Team has prepared a briefing note to close the activity and claim the related results.
Provide transaction advisory support across the gas value chain, with possible countries including Benin, Burkina Faso, Cameroon, Côte d'Ivoire and Senegal Y2.C1.IR1.2-T2.a REG	Gas-to-Power Specialist	Y2 Q1 – Y2 Q4	• Transaction advisory support • IRP for CRSE and SENELEC	In progress: On going as indicated on energy Transition support to identify best ways to progressively phase out carbon intensive fuels from power sector.

Develop West Africa Gas Roadmap Y2.C1.IR1.2-T2.d REG	Gas-to-Power Specialist	Y1Q3 – Y3Q2	West Africa Gas Roadmap	In progress: The gas roadmap is made of two components: the assessment and the regional roadmap. The WAEP team completed many portions of the first component in various countries and the assessment report (regional gas assessment final report) will be ready by Y2Q4. The work was delayed due to missing inputs and lack of liaison to collect and verify information in some countries under restriction. The regional roadmap will be finalized by consolidating the assessment and country roadmaps. Additionally, the recommendation will include best options to decarbonize the sector.
Transaction support for 50MW Peaker Plant in Côte d'Ivoire Y2.C1.IR1.2-T2.b CIV	Gas-to-Power Specialist	Y2Q2 – Y2Q4	• Finalized SOW • Transaction advisory support • Assistance in raising finance	Not Started: The Government of Côte d'Ivoire had not proceeded with procuring this power.
Intervention 1.3				
As part of the Program's regional approach, deliver support to multiple PPP bodies or units support to improve transparent IPP development and competitive bidding process Y2.C1.IR3.3-T1.a REG	Country Manager	Y2 Q1 – Y2 Q4	Competitive Procurement Toolkit that may contain the following and to be confirmed upon completion of WAEP PPP Support Approach in Y1 Q4: • Leading practices recommendations on design of financial models • Training on competitive procurement process • Training on technical and financial evaluation of offers • Training on power project finance • Training in distribution project economic and financial analysis • Training in generation/IPP project financial analysis	In progress: The WAEP Team is developing training materials to deploy this support to a number of countries in the region as they expressed interest. The tool will cover financial, technical and procurement (PPA) related items to international standards. The intervention is expected to start in Q3 with Guinea as first candidate with Togo, CIV and Benin following.

Provide transaction advisory support across the gas value chain, with possible countries including Benin, Burkina Faso, Cameroon, Côte d'Ivoire, and Senegal Y2.C1.IR1.3-T2.a REG	Gas-to-Power Specialist	Y2 Q1 – Y2 Q4	Transaction advisory support	In progress: SOW prepared for 125 MW Malicounda PP, 115 MW Tobene PP, 86 MW Contour Global PP and 300 MW Cap des Biches. Final deliverable for AfDB (Malicounda). The WAEP team has drafted the deliverable for Azura Power (Tobene).
Provide support for the execution of procurement process to CI-ENERGIES Y2.C1.IR1.3-T3.a CIV	OC1 Lead	Y2 Q1 – Y2 Q4	Transaction advisory support	In progress: WAEP has shifted its support on new power generation to DGE.
Provide oversight and expedite the issue of a Request-for-Proposal for two 10MW solar projects in Guinea Y2.C1.IR1.3-T3.b GIN	Guinea Country Manager	Y1Q 2 -Y2 Q4	• Request for proposals • Possible assistance with evaluation of best proposal and bid evaluation • Training on competitive procurements	Suspended: WAEP has suspended support to IPPs in Guinea due to the notice from USAID to discontinue engagements in Guinea.
Support CI-ENERGIES with its various programs to improve grid planning and increase generation, transmission, distribution and new connections Y2.C1.IR1.4-T1.b CIV	Senior Transaction Advisor	Y1 Q4 – Y4 Q4	Increased pipeline and transaction advisory support	In progress: WAEP has agreed upon a scope with the Ministry of Energy. Program support will be provided through the office of the Director General of Energy.
Transaction support for 50MW Peaker Plant in Côte d'Ivoire Y2.C1.IR1.2-T2.b CIV	Gas-to-Power Specialist	Y2 Q2 – Y2 Q3	• Finalized SOW • Transaction Advisory support • Assistance in raising finance	Suspended: The Ivorian Government has decided not to proceed with this procurement.
Intervention 1.5				
Support financing of the Linsan – Maneah Line Y2.C1.IR1.5-T1.a GIN	Senior Transaction Advisor Manager	Y2 Q1 – Y2 Q3	Transaction advisory support for transmission transaction	In Progress (Rolled Over to Year 3): WAEP will support this activity through engagement with the OMVG PMU. WAEP will claim 400MW from the Souapiti Power Plant the OMVG line will help evacuate.

Transco PMU for CLSG for Cote d'Ivoire/Sierra Leone/Liberia/ Guinea Y2.C1.IR1.5-T1.b REG	OC4 Lead and OC1 Lead	Y2 Q1 – Y2 Q4	• Assessment of financial systems completed • Transco is requesting further support	In progress: The first segment was commissioned and transmission line kms claimed. Transaction Action Plan finalized. Transco CLSG will submit TORs for additional support.
OMVG PMU for Guinea/The Gambia/Guinea Bissau/ Sierra Leone/Senegal Y2.C1.IR1.5-T1.c REG	OC4 Lead and OC1 Lead	Y2 Q1 – Y3 Q4	Possible assistance depending on results of NAST	In progress: CESI EnerNex has started the alignment of the WAPP and OMVG grid. Transaction Action Plan finalized
OMVS PMU for additional Mali/Senegal interconnector Y2.C1.IR1.5-T1.d REG	OC4 Lead and OC1 Lead	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized.
North Core PMU for Nigeria/Benin/ Niger/Burkina Y2.C1.IR1.5-T1.e REG	OC4 Lead and OC1 Lead	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized
Guinea-Mali interconnection Y2.C1.IR1.5-T1.f REG	OC4 Lead and OC1 Lead	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized
Transco PMU for CLSG for Cote d'Ivoire/Sierra Leone/Liberia/Guinea Y2.C1.IR1.5-T2.b REG	OC4 and OC1 Leads	Y2 Q1 – Y2 Q4	• Assessment of financial systems completed. • Transco is requesting further support	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized
OMVG PMU for Guinea/Gambia/Guinea Bissau/ Sierra Leone/Senegal Y2.C1.IR1.5-T2.c REG	OC4 and OC1 Leads	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized CESI EnerNex has started the alignment of WAPP and OMVG grid codes.

OMVS PMU for additional Mali/Senegal interconnector Y2.C1.IR1.5-T2.d REG	OC4 and OC1 teams with external consultant support	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized
North Core PMU for Nigeria/Benin/ Niger/Burkina Y2.C1.IR1.5-T2.e REG	OC4 and OC1 teams with external consultant support	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized
Guinea-Mali Interconnection Y2.C1.IR1.5-T2.f REG	OC4 and OC1 teams with external consultant support	Y2 Q1 – Y3 Q4	Possible assistance depending on final results of NAST	In progress: The activity plan and executive summary were submitted to WAPP and PMU donors for approval. The Transaction Action Plan finalized

Outcome 2

Table 8: Outcome 2- Activities and Results

Activity	Activity Manager(s)	Start/End Dates	Deliverable(s)	Status
Intervention 2.1				
Support SENELEC's universal electricity access program Y2.C1.IR2.1-T2.a SEN	Senegal Connections Advisor	Y2 Q1 – Y4 Q3	• SOW signed with SENELEC for electrification program implementation support • Electrification program design report • Diagnostic report to conduct gap analysis, and identify technical assistance and capacity building needs of SENELEC for the universal electricity access program	In progress: The activity is under implementation with SENELEC.

Continuation of assistance to Government of Togo to obtain financing and improve speed and cost of connections and reduce losses. Particular emphasis to be given on private solutions Y2.C1.IR2.1-T3.a TGO	Togo and Benin Country Manager	Y2 Q1 – Y3 Q2	• Letter of Collaboration with MOE Outlining Support to Connections • Capacity Building and Training Materials for Connections Program Rollout	In progress: This activity is under implementation with DGE.
Intervention 2.2				
Support connections activities with LEC in Liberia Y2.C1.IR2.2-T1.a LIB	Senior Distribution Advisor	Y1 Q4 – Y3 Q2	• SOW signed with LEC/ESBI • Hand-on support to LEC for management of concessionaire and roll-out of connections	In progress: The WAEP team is currently supporting procurement process for LEC to concession operations in Bong County.
Assistance on GIS for Electrification Planning in Côte d'Ivoire Y2.C1.IR2.2-T2.a CIV	Côte d'Ivoire Country Manager	Y1 Q4 – Y3 Q2	• SOW with CI-ENERGIES for GIS Support • Capacity building/training report on GIS • Assessment report identifying technical assistance and capacity building needs of CI-ENERGIES	In progress: The WAEP team conducted a current state of GIS system and personnel with CI-ENERGIES and is now in process of rolling out recommendations.
Support the preparation, financing and execution of PNAAEMC (Least Cost Electrification Program) in coordination with AfDB and other DFIs/donors Y2.C1.IR2.2-T3.a GIN	Guinea Country Manager	Y2 Q1 – Y3 Q4	• LOC signed with PNAAEMC for electrification program implementation support • Electrification program design report • Diagnostic report to conduct gap analysis, and identify technical assistance and capacity building needs • Capacity building / Training report on project management	In progress: The WAEP team conducted a current state of GIS system and personnel with PNAAEMC and is now in process of rolling out recommendations.
Under DtP, work with AfDB and donors, including MCC, to encourage more private contractors in planning, financing, construction	DtP Advisor	Y1 Q4 – Y4 Q4	Technical assistance and capacity building support to Niger and Burkina Faso connection programs.	In progress: The WAEP team has committed to contribute to the AfDB's PEDECEL 235,000 connections program, which is currently under preparation, by providing technical assistance to

and operation for distribution networks Y2.C1.IR2.2-T3.b REG				SONABEL. The team is preparing to start support to SONABEL in Y2Q4. The WAEP team is in design phase for electrification support in Niger and is liaising with AfDB and NIGELEC.
Facilitate private sector support to connections efforts in Côte d'Ivoire Y2.C1.IR2.2-T3.e CIV	Economist	Y1 Q3 – Y3 Q4	Impact Evaluation Study of PEPT GIS Dashboard to Track New PEPT Customers Brief Report on Recommendations for Increased Private Sector Support to Connections in Côte d'Ivoire	Activity modification: After further discussions with CIE, the WAEP team solidified the SOW and began implementation. New deliverables added reflect agreed upon components of the SOW.
Support MOE to facilitate financing of connections in Benin Y2.C1.IR2.2-T3.f BEN	Togo and Benin Country Manager	Y2 Q2 – Y2 Q3	• Benin MOE-WAEP LOC • Feasibility study for the generalized project • Final progress report of the universal electrification program	In progress: Activity began in Q3 with DGRE.
Intervention 2.3				
Technical assistance to ASER in implementing connection packages (internal wiring, minimum standard safety equipment, meter panel, training program to certify electricians) Y2.C1.IR2.3-T2.b SEN	Senegal Connections Advisor	Y2 Q1 – Y3 Q4	• Connection services package manual with equipment safety and installation principles • Implementation report	Not Started: This activity will be part of the overall support to SENELEC in their access program. Support to ASER aligns to some of SENELEC's needs. Specific focus will be given to ASER in Y3.
Support Connections Activities in Sierra Leone with EDSA - GIS, new customer approach, regularization of connections Y2.C1.IR2.3-T2.c SL	Distribution Advisor	Y2 Q3 – Y3 Q4	Report on initiatives/projects related to regularized/new connections Report recommending strategy and action plan for implementation with detailed timelines	In progress: The WAEP team established with EDSA 3 axes of support focused loss reduction, network planning, and GIS expansion.

Outcome 3

Table 9: Outcome 3- Activities and Results

Activity	Activity Manager (s)	Start/End Dates	Deliverable(s)	Status
Intervention 3.1				
Review the deliverables of ARSE operationalization documentations and procedures prepared by Capgemini Y2.CI.IR3.1-T1.c CHD	DtP Advisor	Y2 Q2 – Y2 Q3	• Report including recommendations following the review of ARSE documentations and procedures • LOC signed with ARSE Chad	Completed: The WAEP team has submitted deliverables to counterparts and received an email appreciating WAEP's support.
Design proposed TA and engage buy-in from 2-3 regulators for regulatory strengthening Y2.C1.IR3.1-T2.a REG	Regulatory Specialist	Y1 Q4 – Y2 Q3	• Evaluation of results of regulator NASTs and selection of regulators for WAEP assistance • Diagnostic report for each of the selected regulators to conduct gap analysis, and identify technical assistance and capacity building needs • LOC signed with the selected regulators outlining agreed upon areas of cooperation (2-3)	Completed; The WAEP team has completed the NAST exercise and organized a Webinar to share findings with regulators and USAID Partners.
Proposed changing: Regional training program on economic regulation of the power sector with focus on practical aspects on tariff setting in a global and West African context with specific emphasis on Burkina Faso Y2.CI.IR3.1-T2.b BF	Regulatory Specialist Deloitte France Economic Advisory Team	Y2 Q2 – Y2 Q4	• Training record on tariff methodology delivered to multiple countries • SOW signed with either ARSE Burkina Faso or SONABEL	In progress: This activity was redesigned and incorporated into a regional activity that will be delivered across multiple countries in the G5 Sahel region and it is scheduled for November 22nd to 25th 2021.
Build capacity of ARSE to prepare for regional market integration Y2.C1.IR3.1-T2.c BF	DtP Advisor	Y2 Q2 – Y2 Q4	Capacity building to ARSE on regional market integration and requirements for PPAs and TSAs	Completed. This activity was redesigned and incorporated into the regional activity on competitive procurement PPAs and PPPs.

Design a tariff methodology as well as establishing a methodology for accounting for government diesel and HFO subsidies to the utility SNE Design a tariff methodology as well as establishing a methodology for accounting for government diesel and HFO subsidies to the utility SNE; and assist ARSE in improving capacity to draft concession contract between SNE and GoChad Y2.CI.IR3.1-T2.d CHD	DtP Advisor	Y2 Q2 – Y2 Q4	• Tariff methodology designed • Methodology for accounting for GoChad subsidies for diesel and HFO • Training records on tariff methodology Support to Concession contract of performance between GoChad and SNE	In progress: This activity was redesigned and incorporated into a regional activity that will be delivered across multiple countries in the G5 Sahel region and it is scheduled for November 22nd to 25th 2021.
Develop a uniform regulatory accounting system and provide associated capacity building Y2.CI.IR3.1-T2.h NIG	DtP Advisor	Y2 Q2 – Y3 Q4	• Regulatory accounting rules • Training records on these regulatory accounting rules • SOW signed with ARSE Niger to focus on tariff methodology	In progress: This activity was redesigned and incorporated into a regional activity that will be delivered across multiple countries in the G5 Sahel region and it is scheduled for November 22nd to 25th 2021.
Develop an Excel-based model for determining cost-reflective tariffs and a harmonized regional tariff setting methodology Y2.CI.IR3.1-T2.i SL	Regulatory Specialist	Y2 Q1 – Y3 Q2	• Excel based model for tariff calculation developed • Tariff methodology developed • Training records on both tariff methodology and Excel based model for tariff calculation	In progress: This activity was redesigned and incorporated into a regional activity that will be delivered across multiple countries in the G5 Sahel region and it is scheduled for November 22nd to 25th 2021.
Intervention 3.2				
Engage buy-in from 3-5 utilities for loss reduction, technical performance, and cost recovery efforts based on results of NAST Y2.C1.IR3.2-T1.a REG	Utility Specialist	Y1 Q4 – Y2 Q3	• Evaluation of results of utility NASTs and selection of utilities for WAEP assistance • Introductory pitch deck • Validation report for each of the selected utilities to conduct baseline analysis of the data on losses, collections and billing efficiency, grid reliability and management processes; identify priorities for commercial improvements and gauge management support	Completed; The WAEP team has completed the NAST exercise and organized a Webinar to share findings with regulators and USAID Partners.

Support loss reduction, performance improvements and new connections for EDSA (Sierra Leone) Y2.C1.IR3.2-T1.b SL	Distribution Specialist	Y2 Q1- Y2 Q4	• SOW for EDSA developed • Turnaround plans and baseline assessment (as needed) for EDSA showing the recommended activities for loss reduction baseline, including IT, metering, billing and collections • Strategy and action plan for loss reduction • Training on commercial systems, network modelling for performance improvement • Technical assistance for software integration where feasible	In progress: The WAEP team visited Sierra Leone and is currently finalizing the SOW and hiring a consultant to deliver the activity in Year 3.
Support LEC, Liberia in loss reduction (in conjunction with Y2.C1.IR2.2-T1.a LIB)	Distribution Specialist	Y2 Q1- Y2 Q4	• SOW for LEC developed • LOCs signed with LEC • Turnaround plans and baseline assessment (as needed) for LEC showing the recommended activities • Start implementation of the turnaround plan	In progress: A consultant is conducting the data collection needed for this activity prior to the procurement phase.
Support other utilities (e.g., ELECTRA in Cape Verde) in loss reduction, financial improvements and network optimization Y2.C1.IR3.2-T1.e CV	Utility Performance Specialist	Y2 Q1- Y2 Q4	• SOW for ELECTRA developed and signed • Turnaround plans and baseline assessment (as needed) for ELECTRA showing the recommended activities • Start implementation of the turnaround plan	In progress: The WAEP team plans to send consultants to ELECTRA in-person to conduct a preliminary assessment of the losses and financial in loss reduction, financial improvements and network optimization. The WAEP team will continue to provide light-touch support to ELECTRA in Y3.
Support alternative power delivery in Liberia Y2.C1.IR2.2-T1.a LIB	Senior Distribution Advisor	Y1 Q4 – Y2 Q4	• Steering Committee Terms of reference issued • Procurement documentation	In progress: The WAEP team has conducted data assessment from Britta on Nimba, Bong and the rural counties and established final reports on the data collection process and provided recommendations to help LEC through the procurement phase. The Activity shall continue in Y3.

Support loss reduction activities together with CI-ENERGIES and CIE Y2.C1.IR3.2-T1.d CIV	Cote d'Ivoire Country Manager	Y2 Q1 – Y2 Q4	• Baseline assessment of technical and non-technical losses and cost/benefit analysis. This work is already partially complete • Oversight of key technical and investments to reduce losses	Completed. The WAEP team had delivered training and associated training materials and reports.
Support SENELEC, CRSE and the Ministry in the utility unbundling process Y2.C1.IR3.2-T6.b SEN	Regulatory Specialist	Y2 Q1 – Y2 Q3	• Benchmarking analysis • Proceedings from training or workshop to present analysis and leading practices • Virtual study tour to see and discuss with other country stakeholders, hear and learn from them	Deleted: The counterparts in Senegal did not show interest to pursue this activity.
Intervention 3.3				
As part of the Program's regional approach, deliver support to multiple PPP bodies or units support to improve transparent IPP development and competitive bidding process Y2.C1.IR3.3-T1.a REG	Regulatory and Procurement Specialist	Y2 Q3 – Y2 Q4	Competitive Procurement Toolkit that may contain the following and to be confirmed upon completion of WAEP PPP Support Approach in Y1 Q4: • Leading practices recommendations on design of financial models • Training on competitive procurement process • Training on technical and financial evaluation of offers • Training on power project finance • Training in distribution project economic and financial analysis • Training in generation/IPP project financial analysis / power project finance	Completed: First phase of activity was to conduct a regional landscape study of IPP Enabling Environment and prepare a regional approach to improve enabling environment for IPPs has been completed. The second phase involves focusing on a set of countries in Year 2 with goal to scale in Years 3 and 4.
LPRA Capacity Building on Local Content, Women in Energy and CSO Involvement in Oil and Gas Y2.C1.IR3.3-T2.a LIB	Stakeholder Engagement Specialist	Y2 Q3 – Y2 Q1	• Training materials • Training reports • Guiding document on Gas-to-Power strategy	Deleted: The counterparts insisted on in-person trainings in Liberia which could not be possible at the time as a result of COVID 19 related travel restrictions.

Enhance a trustful and sustainable engagement between energy regulatory authorities and social accountability actors (CSOs, media and consumer Groups) in Senegal Y2.C1.IR3.4-T1.a SEN	Stakeholder Engagement Specialist	Y2 Q1 – Y2 Q3	• Benchmarking analysis and trip report • Proceedings from training or workshop to present analysis and leading practices • Report from virtual study tour to see and discuss with other country stakeholders	Completed: The WAEP team has completed the activity and a report is being prepared to be shared with USAID

Outcome 4

Table 10: Outcome 4- Activities and Results

Activity	WAEP Activity Manager (s)	Start/End Dates	Deliverable(s)	Status
Intervention 4.1				
Harmonize regional and national power planning through shared planning and analysis tools Y2.C1.IR4.1-T1.a REG	OC4 Technical Advisor	Y1 Q4 – Y2 Q4	• Analysis of regional needs for power systems analysis and planning tools • Development of a regional concept for harmonization based on shared power systems analysis and planning tools • Evaluation of power planning software alternatives • Recommendations for WAEP support to power planning tools • Software training(s)/workshop(s) • Implementation roadmap	In progress: The WAEP team delivered two final reports "Evaluation of power planning software alternatives" and "Recommendations for Power Planning Tool" to WAPP ICC and USAID. The WAEP team is finalizing the four remaining reports "Implementation Roadmap", "Business plan and sustainability analysis of planning software procurements", "Analysis of regional needs for power systems analysis and planning tools" and "Regional approach to power development planning."
Build ERERA's capacity to implement Market Regulations for WAPP's real-time energy exchange Y2.C1.IR4.1-T1.b REG	OC4 Lead	Y2 Q1 – Y2 Q4	• Policy Paper • Implementation roadmap • Training Reports	Not started: Based on updated analysis of priority needs, this activity will be postponed and potentially suspended to an undetermined date. The WAEP team will work with ERERA to determine whether this activity is needed upon the completion of Y2.C1.IR4.1-T1.c REG.
Establish ERERA's capacity to monitor the regional electricity market Y2.C1.IR4.1-T1.c REG	OC4 Lead	Y2 Q1 – Y2 Q4	• Implementation roadmap • Training on Fundamentals of Market Monitoring and an Advisor to support ERERA and WAPP/ICC • Training Report	In progress: SOW developed. a subcontractor mobilized. Technical summary of the trainings validated. Three trainings scheduled to begin in November

Develop a WAPP endorsed Project Implementation Manual (PIM) for WAPP Member PMUs Y2.C1.IR4.1-T1.d REG	OC4 Deputy Lead	Y3 Q1 – Y3 Q2	Template/ Regional Project Implementation Manual endorsed by WAPP to be used as a guiding document for all Interconnector projects developed under the auspices of WAPP	Deferred to Y3: The WAEP team developed a draft implementation plan to be presented to WAPP during the week of April 26. The team experienced delays in getting this activity started based on WAPP's request to receive consent from donor community. WAPP has now given approval for this activity to be implemented. The activity will be implemented in Y
Review and assess the sufficiency of ECOWAS member states' legal frameworks and the compliance with regional regulations to enable the operationalization of the Regional Electricity Market. Y2.C1.IR4.1-T2.a REG	OC4 Deputy Lead	Y2 Q2 – Y3 Q1	Report on the regulatory readiness of ERERA member states for the operationalization of the ECOWAS power market Road Map for harmonization of regional and national market entry legislation.	Not started: Based on updated analysis of priority needs, this activity will be postponed and potentially suspended to an undetermined date. The team will work with ERERA to determine whether this activity is needed upon the completion of Y2.C1.IR4.1-T1.c REG.
Intervention 4.2				
Support sourcing for Donor Funding for the BICC Y2.C1.IR4.2-T1.a REG	OC4 Deputy Lead, External Resources (Business continuity experts)	Y1 Q4 – Y2 Q1	• Donor prospectus for BICC Funding • "Donor Call" workshop	In progress: The WAEP team is developing the SOW.
Assess and prioritize transmission financing gaps across West Africa Y2.C1.IR4.2-T2.a REG	Infrastructure Project Delivery Specialist	Y2 Q1 – Y2 Q1	• Report on PPPs for transmission projects • Briefing on risk allocation models, commercial arrangements, and agreements suitable for private finance of transmission projects to be shared with CLDP for development of handbook on transmission financing • Briefing on traditional and non-traditional transmission project finance approaches in West Africa to be shared with CLDP for development of handbook on transmission financing	Completed: Report on transmission financing gaps across West Africa has been submitted

Identify available financing platforms and tools and assess their applicability to West Africa Y2.C1.IR4.2-T2.b REG	Infrastructure Project Delivery Specialist and OC4 Lead	Y2 Q2 – Y2 Q4	• Report on PPPs for transmission projects • Briefing on risk allocation models, commercial arrangements, and agreements suitable for private finance of transmission projects to be shared with CLDP for development of handbook on transmission financing • Briefing on traditional and non-traditional transmission project finance approaches in West Africa to be shared with CLDP for development of handbook on transmission financing	Completed: Report on available financing platforms and tools applicable to West Africa has been submitted.
Provide capacity building support for operators/operations Personnel of WAPP Member PMUs Y2.C1.IR4.2-T3.a REG	OC4 Lead, External Resources to be Identified	Y2 Q3 – Y3 Q2	Training workshops and Training reports on capacity building assistance	In-progress: despite initial delay in getting consent of WAPP's donor community, WAPP finally gave approval for this activity to start. Preparatory works are ongoing.
Assess existing software used by PMUs for the current GIS and database management to identify instances of misalignment and if possible, support procurement by coordinating with PA partners Y2.C1.IR4.2-T3.b REG	OC4 Deputy Lead, External Resource to be Identified	Y2 Q1 – Y2 Q2	• Software licensing • Software training(s)/workshop(s) proceedings • Implementation roadmap	Not Started: The WAEP team is determining if the software procurement is required.
Strengthen PMUs capability to manage environmental, safety, resettlement action planning and compensation issues Y2.C1.IR4.2-T3.c REG	OC4 Lead	Y2 Q2 – Y3 Q1	• Training(s)/workshop(s) • Training reports • Implementation roadmap	In-progress: Despite initial delay in getting consent of WAPP's donor community, WAPP finally gave approval for this activity to start. About 60% preparatory works are completed for this capacity building activity to start in July 2021. This activity is being implemented within the framework of WAEP-WAPP Exchange Forum.
Support Capacity Building needs of PMUs for Project management, Monitoring & Evaluation, Financial administration and Performance Reporting Y2.C1.IR4.2-T3.d REG	OC4 Deputy Lead, External Resource to be Identified	Y2 Q2 – Y3 Q2	• Software • Software training(s)/workshop(s) proceedings • Implementation roadmap	In-progress: Despite initial delay in getting consent of WAPP's donor community, WAPP finally gave approval for this activity to start. About 30% preparatory works are completed for this capacity building activity to start in September 2021.

Assess and support Improvements in WAPP Secretariat's HR and performance management systems Y2.C1.IR4.2-T3.e. REG	OC4 Lead		• Appraisal of WAPP's Performance Management System • Roadmap for application of integrated systems and/or software for personnel management functions	Not Started: The WAEP team experienced delays in getting this activity started based on WAPP's request to receive consent from donor community. The team met with WAPP to develop a plan to move this activity forward plans to commence in May 2021.
Intervention 4.3				
Support establishing the technical and institutional capacity needed to operate an interconnected synchronous power system reliably over a control area Y2.C1.IR4.3-T1.a REG	OC4 Lead and Cross-Border Regulatory & Policy Specialist	Y1 Q4 – Y2 Q4	• Assessment: Interconnection (IC) code compliance gaps for newly interconnected WAPP member utilities • Report reviewing of WAPP ICC early operations, with suggested improvements	In progress: CESI/EnerNex is currently implementing this activity.
Support the training and certification of system operators Y2.C1.IR4.3-T1.c REG	OC4 Lead and CESI/EnerNex	Y2 Q3 – Y3 Q1	• Review/appraisal of the WB supported Operator Training and Certification program • Training reports	Not Started: WAPP ICC to provide dates for the trainings
Provide Power Systems Analysis Capacity Building for ICC, CAC and NCC personnel Y2.C1.IR4.3-T1.d REG	OC4 Lead	Y2 Q2 – Y3 Q1	• Power systems, markets and IT Capacity building Assessment report covering personnel in NCCs, CACs, and WAPP ICC • Curricula, delivery plan, training materials for priority power systems, markets and IT capacity building modules	In progress: A survey was disseminated to different entities. The collected information was used to assess the capacity building needs. The team is finalizing the assessment report.
Support the development and implementation of an ancillary services market roadmap for WAPP ICC Y2.C1.IR4.3-T2.a REG	OC4 Technical Advisor	Y2 Q2 – Y3 Q1	Develop practical proposals on a country-specific level to accelerate procurement of A/S and bring forward the development of an ancillary services market	In progress: A data request form was sent to the WAPP's members. Collected data will be used to inform the practical proposal development.
Conduct system-wide studies and build WAPP ICC capacity to conduct the studies Y2.C1.IR4.3-T2.b REG	OC4 Technical Advisor	Y2 Q2 – Y3 Q1	• Annual generation adequacy study • Annual transmission adequacy study • Security assessment • Regional grid flexibility assessment	In progress: The WAEP team reviewed and updated 13 WAPP ICC business process documents and related procedures. The WAEP team has been collecting data for security assessment, optimal power flow and reactive power planning studies.

			• Optimal power flow and reactive power planning study • System-wide study procedure • Updated WAPP ICC Business Process documents and related procedures • System studies datasets	Annual generation and transmission adequacy studies and regional grid flexibility assessment have been put on hold because WAPP ICC does not have necessary planning tool, such as PLEXOS to complete the analysis.
Facilitating accurate and real-time SCADA/EMS Data Exchange between WAPP ICC, National Control Centers, and Control Area Centers with the West African Power Pool Y2.C1.IR4.3-T2.d REG	OC4 Technical Advisor	Y2 Q2 – Y2 Q4	• Review/confirmation of previous GE SCADA/EMS audit • Recommend measures to ensure that the data provided from NCC's are accurate, adequate and communicated seamlessly so as to allow the ICC to perform its operational functions	In progress: The WAEP team started with the review and confirmation of previous GE SCADA/EMS audit. It is finalizing the current communication architecture report.
Support the process of alignment of OMVG with the WAPP Regional Grid Code and optical ground wire operating agreement Y2.C1.IR4.3-T3.a REG	OC4 Lead	Y2 Q2 – Y2 Q4	• TSA finalized and ready for signature for OMVG Loop • Analysis of OMVG Grid Code scope and main aspects • Gap analysis between OMVG Grid Code and WAPP Regional Grid Code • Identification of the potential improvements to OMVG O&M agreement	• In progress: The OC4 team conducted analysis of OMVG Grid Code scope and main aspects and performed gap analysis between OMVG Grid Code and WAPP Regional Grid Code. The team is finalizing the report.
Identify national investment gaps and support mobilization of necessary financing Y2.C1.IR4.3-T4.a REG	OC4 Deputy Lead, External Resources (Business continuity experts)	Y1 Q4 – Y2 Q1	• National investment requirements analysis • Analysis of potential financing mechanisms • "Donor call" workshop to mobilize necessary financing	In progress: The WAEP team is working with CESI/Enernex to determine resource capabilities to execute.

Cross-Cutting Activities

Table 11: Crosscutting Activities and Results

Activity	WAEP Activity Manager (s)	Start/End Dates	Deliverable(s)	Status
Support to Power Africa Coordinators Office (PACO)				
Complete quarterly update of the PATT and PAIS Y2.C1.SF-.a REG	MEL Specialist, KM Specialist	Y1 Q1 – Y4 Q4	Quarterly PATT data entry (within 30 days after the end of each quarter of performance)	Ongoing; Submission of data on quarterly basis
On-demand analytical support to PACO and USAID Missions Y2.C1.SF-b REG	PMO Lead, MEL Specialist, KM Specialist	Y1 Q1 – Y4 Q4	On-demand Power Africa analysis, data reports, marketing and collateral products	Ongoing: The communications team developed and submitted content for Power Africa's one-pager on West Africa
Support and participate in Power Africa forums and events Y2.C1.SF-c REG	DCOP; Travel and Events Coordinator, Communication Specialist	Y1 Q1 – Y4 Q4	On-demand event presentations, campaign materials, and reports	In progress: The communications team developed documentation for the upcoming Power Africa Partners Meeting
Maintain WAEP power sector approaches for key implementation countries Y2.C1.SF-d REG	Agile Response, Outcome Leads	Y1 Q1 – Y4 Q4, as needed per country	Power sector approaches by Country	Completed: All country strategies are being implemented.
Participation in Power Africa Energy Office Technical Learning Groups Y2.C1.SF-e REG	DCOP, SRTL, other team members as appropriate	Y1 Q1 – Y4 Q4	On-demand presentations, materials, and reports	Ongoing

Communications and Outreach				
Monthly and quarterly progress reporting Y2.C1. COMM-a REG	COMM Specialist, PMO Lead	Y1 Q1 – Y4 Q4	Monthly and quarterly reports	In progress: Submitted monthly and quarter reports for the period.
Social media content Y2.C1.COMM-b REG	COMM Specialist	Y1 Q1 – Y4 Q4	Social media posts	In progress: Submitted content to feature on Power Africa's social media platforms (Facebook, Twitter, and LinkedIn)
Success stories Y2.C1.COMM-c REG	COMM Specialist, PMO Lead, MEL Specialist	Y1 Q1 – Y4 Q4	Success stories	In progress: Two success stories approved in FY2 Q2
Environmental Monitoring and Mitigation				
Environmental and social screening of the Program-supported transactions per the PESRM Checklist Y2.C1.IR1.6-T2.a REG	ESIA Specialist w/ STTA support	Ongoing	Completed PESRM checklist for each WAEP-supported transaction. Preference will be given to transactions with a strong score per the fit-check analysis	In progress. Seven priority PESRM screenings, "Batch 1" were submitted to the TOCOR for comment at the end of April. The team has begun "Batch 2" PESRM checklist screenings.
Environmental reviews of ESIAs for late stage transactions Y2.C1.IR1.6-T2.a REG	ESIA Specialist w/ STTA support	Ongoing	E&S due diligence	Completed. All stage 4, transactions have had their ESIA documents reviewed via the PESRM checklist.
MEL				
Monthly and quarterly progress reporting Y2.C1.COMM-a REG	MEL Specialist	Y1 Q1 – Y4 Q4	MEL section of monthly and quarterly reports	Ongoing; data reporting is included in monthly and quarterly reports
Support PMO system implementation Y2.C1.MEL-a REG	KM Specialist, MEL Specialist	Y1 Q1 – Y4 Q4	Operational PMO system	Ongoing
Support SOW development support Y2.C1.MEL-b REG	MEL Specialist, PMO Lead	Y1 Q1 – Y4 Q4	Completed MEL components of SOWs	Ongoing

Maintenance and implementation of reporting templates and data documentation Y2.C1.MEL-c REG	MEL Specialist, PMO Lead	Y1 Q1 – Y4 Q4	• Utility reporting templates • Data reporting process flows	Ongoing
Data collection, verification, and documentation Y2.C1.MEL-d REG	MEL Specialist, KM Specialist	Y1 Q1 – Y4 Q4	• MEL database • Data verification reports	Ongoing
Qualitative MEL Assessment and Reporting Y2.C1.COMM-c REG	MEL Specialist, Comms Specialist	Y1 Q1 – Y4 Q4	Success Stories	Ongoing
Facilitated Learning Sessions Y2.C1.MEL-e REG	MEL Specialist, PMO Lead	Y1 Q1 – Y4 Q4	Learning Reports	Ongoing
Gender Mainstreaming				
Women in Energy Profiles Y2.C1.GEN-a REG	Gender Specialist, DCOP	Y1 Q1 – Y4 Q4	Women in Energy Profiles	Ongoing: Three stories have been developed and published on Power Africa social media handles.

APPENDIX F: PERFORMANCE INDICATOR TRACKING CHART

The table below illustrates the progress of the Program against approved indicators

Table 12: Performance Indicator Tracking Sheet

No	No. Indicator	Data Source	Disaggregation	FY20 Actuals	FY21 Actuals (*Target*)	FY22 Target	FY23 Target	Total Results to Date (*LoP*)
1	Generation Capacity Reached Financial Close: Number of MW from transactions that achieved financial close (PA #8)	Financial closure documented through press release, written email or letter from counterpart noting financial close reached, or financial close bank documents if possible given confidential information restrictions	***Technology (Hydro, solar, geothermal, wind, renewable biomass, gas); Country; Qualified vs Power Africa transactions; USG vs Non-USG***	255 MW	**510 MW** *(1103 MW)*	1855 MW	4792 MW	**765 MW** *(8005 MW)*
2	Wholesale cost of generation	Utility and regulator documentation	***Country***	0%	**0%** *(3%, 2 countries; 5%, 1 country)*	7%, 2 countries; 5%, 1 country	10%, 3 countries	**0** *(20% in at least 3 countries)*
3	Kilometers of Power Lines Constructed or Rehabilitated: The sum of linear kilometers of new, reconstructed, rehabilitated or upgraded transmission and distribution lines that have been energized, tested, and commission/installed with USG, development partner or private sector partner support (PA#19)	Project progress reports; USG agencies (including MCC, USAID)	***Transmission vs Distribution; Country; Name of Project (if applicable); Start and end point; Commissioning date***	0	**867 km** *(2000 km)*	900 km	900 km	**867 km** *(3800 km)*
4	Electricity Access: Number of new grid and off-grid actual direct connections (PA #3)	Program records	***Type of Connection; USG vs Non-USG; Type of Enterprise; Country***	0	**419,579** *(390,000)*	1,100,000	2,010,000	**419,579** *(3,500,000)*

No	No. Indicator	Data Source	Disaggregation	FY20 Actuals	FY21 Actuals (*Target*)	FY22 Target	FY23 Target	Total Results to Date (*LoP*)
5	Average cost to utility per connection	Utility records and potentially Ministry of Energy or other IFI/donor records that are working on connection costs	***Country, Utility, Connection category***	0	**0** *(1)*	1	0	**0** *(Reduced, 2 countries)*
6	Aggregate Losses: Total technical and non-technical electricity losses/total electricity generated (PA #22)	Utility documentation	***Total MWh generated; % of calculated/commercial losses; % of calculated/estimated technical losses; Type of Loss; Country***	0	**1** *(1)*	1	1	**Reduced, in one utility** *(Reduced, at least three utilities)*
7	Cost recovery	Utility documentation	***Country, Utility***	0	**0** *(1)*	1	0	**0** *(Improved, at least two utilities)*
8	Utility performance (frequency of outages, duration of outages)	Utility documentation	***Utility, Country***	0	**0** *(1)*	1	0	**0** *(Improved, 2 utilities)*
9	TWh additional cross border power trade	WAPP and other countries within WAEP's scope	***Countries connected; WAPP membership (Y/N)***	0	**0.021TWh** *(0.11 TWh)*	1.22 TWh	2.17 TWh	**0.021TWh** *(3.5 TWh)*
10	Generation Capacity Pending Financial Close: Number of MW from transactions that have not yet achieved financial close (PA #6)	Program records	***Technology (Hydro, solar, geothermal, wind, renewable biomass, gas); Country; Qualified vs Power Africa Transaction; USG vs Non-USG***	6202 MW	**8193 MW** *(10081 MW)*	7423 MW	0 MW	**8193 MW** *(NA)*
11	Transactions Pending Financial Close: Number of transactions that have not yet achieved financial close (PA#7)	Program records	***Technology (Hydro, solar, geothermal, wind, renewable biomass, gas); Country; Qualified vs Power Africa Transaction; USG vs Non-USG***	74	**78** *(70)*	39	NA	**78** *(NA)*
12	Transactions Reached Financial Close: Number of transactions that have achieved financial close (PA#9; EG.12-5)	Financial closure documentation	***Technology (Hydro, solar, geothermal, wind, renewable biomass, gas); Country; Qualified***	1	**2** *(10)*	35	39	**2** *(85)*

No	No. Indicator	Data Source	Disaggregation	FY20 Actuals	FY21 Actuals (*Target*)	FY22 Target	FY23 Target	Total Results to Date (*LoP*)
			vs Power Africa Transaction; USG vs Non-USG					
13	Kilometers of transmission and distribution lines reached financial close with WAEP support (PA#20)	Financial closure documentation	***Transmission vs Distribution; Country; Name of Project (if applicable); Start and end point; Date of FC***	70 km	**70 km** *(TBD)*	TBD	TBD	**70 km** *(NA)*
14	Amount Mobilized: Amount of investment mobilized (in USD) for energy projects by USG (PA#14; EG.7.2-1)	Program records	***Technology (Hydro, solar, geothermal, wind, renewable biomass, gas); Country; Generation, transmission, distribution, off-grid; USG, Public vs. Private Partner, Development Partner***	US$127M	**$1.530B** *(TBD)*	TBD	TBD	**$1.657B** *(TBD)*
15	Electricity Access: Number of new grid and off-grid anticipated direct connections at financial close (PA #2)	Program records and utility documentation, including customer connection documents; procurement documents, government negotiated agreements, financial documents, and investment agreements	***Type of Connection; USG vs Non-USG; Type of Enterprise; Country***	2,030,000	**2,600,000** *(3,110,000)*	2,030,000	NA	**2,600,000** *(NA)*
16	Average time required to get a connection	Ministry of Energy records (connection and sales records), National Electrification Program (NEP), and/or utility records	***Country/Utility; Type of Enterprise (# Residential connections, # Business (commercial and/or industrial) connections, # of Unknown)***	0	**0** *(1)*	1	1	**0** *(Reduced, 3 countries)*
17	Cost of connection for end-users	Utility documentation	***Country, utility***	0	**0** *(1)*	1	0	**0** *(Reduced, 2 countries)*
18	Regional power utility trade relationships	WAPP; PPA documentation	***NA***	0	**0** *(1)*	1	0	**0** *(2)*

No	No. Indicator	Data Source	Disaggregation	FY20 Actuals	FY21 Actuals (*Target*)	FY22 Target	FY23 Target	Total Results to Date (*LoP*)
19	Control area centers operationalized	WAPP	***Control Center, Criteria of progress***	0	**0** *(1)*	2	2	**0** *(5)*
20	High priority regional transmission projects operationalized	WAPP and where required individual utility data surveys/ collection	***Project; Country/Countries; Percent completion of operationalization criteria***	0	**1** *(1)*	2	3	**1** *(6)*
21	Policy Reforms: Number of laws, policies, regulations or standards to enhance energy sector governance formally proposed, adopted, or implemented as supported by USG assistance (PA#23; EG.7.3-1)	Record of laws, policies, strategies, or regulations	***Formally proposed, adopted, or implemented; Regional, National; Focus of reform, whether it enables private sector participation, clean & cleaner energy investments, small scale and off-grid investments, and/or the promotion of gender equity within the energy sector; Country; Off-Grid; Generation***	1	**11** *(22)*	14	8	**12** *(35)*
22	Institutions with improved tariff advocacy capacity	Project progress reports; MEL Tool	***Location, Stage***	0	**1** *(4)*	4	4	**1** *(12)*
23	Number of institutions with improved capacity to address clean energy issues as supported by USG assistance (EG. 12-2)	Program records	***Type of Institution***	1	**6** *(25)*	20	15	**7** *(61)*
24	Women in leadership roles	Program records	***Country, Role/Profession***	1	**2** *(4)*	8	8	**2** *(20)*
25	Reports, analysis, reviews, action plans, procurement documents, tools developed, and campaigns and study tours implemented	Program records	***Campaigns, Workshops***	26	**83** *(80)*	80	52	**109** *(238)*
26	Training and Capacity Building Activities: Number of people trained in technical energy fields supported by USG assistance (PA#18; EG.12-1)	Program records	***Sex – Number of men and Number of women; Country***	40	**451** *(500)*	400	240	**491** *(1180)*

No	No. Indicator	Data Source	Disaggregation	FY20 Actuals	FY21 Actuals (*Target*)	FY22 Target	FY23 Target	Total Results to Date (*LoP*)
27	Person hours of training	Program records	***Sex – Number of men and Number of women; Country***	560	**2356** *(3000)*	2400	1440	**2916** *(7400)*
28	National energy mix showing percent MW from clean energy technologies in each country	Project progress reports; MEL Tool	***Technology, Country***	NA	*NA*	NA	NA	*NA*
29	Utilization of Risk Mitigation Tools: Utilization of risk mitigation tools by developers of Qualified Transactions supported by WAEP (PA#17)	Project progress reports; MEL Tool	***Type of Tool, Country***	NA	**0** *(NA)*	NA	NA	**0** *(NA)*
30	U.S. exports for energy projects	USTDA, EXIM, Department of Commerce	***Country***	NA	*NA*	NA	NA	*NA*

Table 13. Breakdown of new grid and off-grid actual direct connections by quarter by country.

Country	FY2021 Quarter 3	FY2021 Quarter 4	Total
Liberia	23000	38020	61020
Senegal	32736	-	32736
Benin	-	36460	36460
Cote d'Ivoire	-	289,363	289,363
Total	**55736**	**363843**	**419579**

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