

POWER AFRICA

A U.S. GOVERNMENT-LED PARTNERSHIP



POWERING POTENTIAL

ANNUAL REPORT 2022

2022 ACHIEVEMENTS



ADDED 978 MW of new electricity (74% from renewable sources) to the grid from 13 projects that are powering potential across the continent



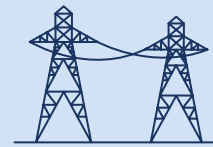
CELEBRATED commissioning of **280 MW** at two Power Africa-supported **wind farms in South Africa**

DELIVERED first-time and improved electricity access to 37.7 MILLION people through 7.6 MILLION new on- and off-grid connections to homes and businesses



MOBILIZED \$234 million in investment and advisory support to help off-grid solar companies gain access to finance and secure capital for growth

ADVANCED South Africa's Just Energy Transition Program by training 64 municipal leaders, including 34 women, in energy leadership and economic decarbonization



SPURRED regional electricity trade via a **200 MW** cross-border agreement between Ethiopia and Kenya and a new transmission line connecting Rwanda and Uganda



INITIATED the Health Electrification and Telecommunications Alliance to electrify and digitally connect 10,000 health facilities



AVOIDED 7.7 MILLION tons of CO₂ emissions, the equivalent of burning 8.5 billion pounds of coal

LAUNCHED the U.S.-Africa Clean Tech Energy Network to increase energy access via technology investment and deals of up to **\$350 million** over 5 years

PHOTO: TIA Productions



Since 2013:

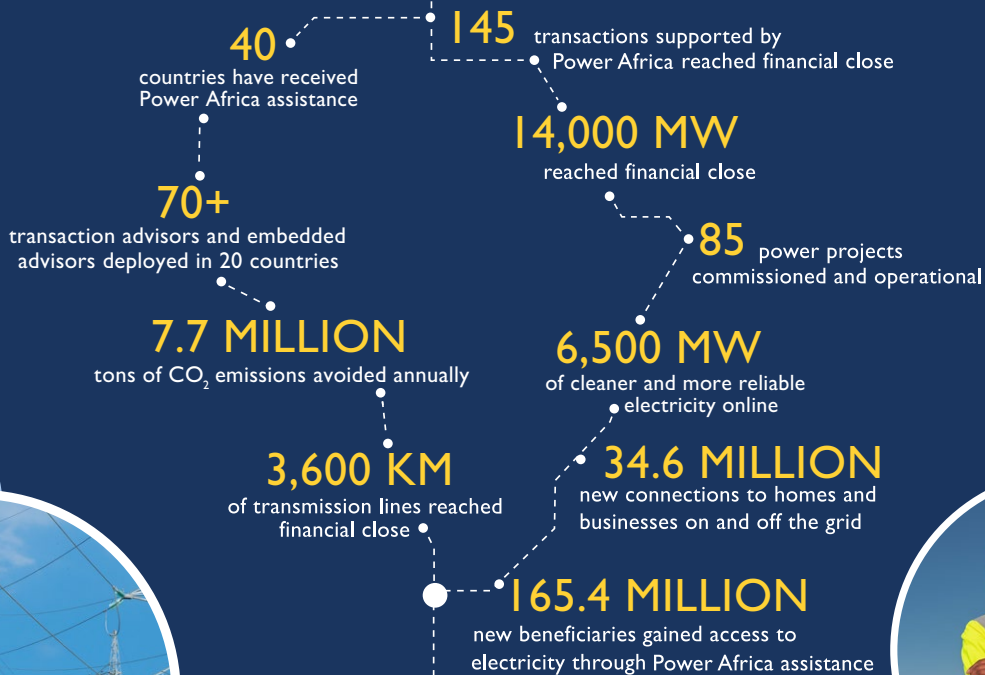


PHOTO: Rachel Couch



PHOTO: Fraser Schenck, Current Media

Lights On!

A MESSAGE

from Power Africa Coordinator Mark Carrato

What a difference a year makes. If 2021 was a time of promise and challenge, 2022 was a year for action and implementation.

We delivered first-time and improved electricity to more than **37 million** people. We added **978 MW** to the grid, primarily via renewables, which are now uplifting lives and energizing economies while avoiding **7.7 million** metric tons of greenhouse gases. We continued to support a **just transition** from coal to cleaner sources by investing in long-term planning and workforce development in coal-dependent communities like Mpumalanga, South Africa.

In December, we announced one of the largest Global Development Alliances in USAID history, the **Health Facility Electrification and Telecommunications Alliance**, which will leverage more than **\$150 million** to power and digitally connect 10,000 health facilities. At the U.S.-Africa Leaders Summit, we launched the **U.S.-Africa Clean Tech Energy Network**, deepening our commitment to end energy poverty by bringing **\$350 million** of project-ready clean energy solutions to market in the next five years.



Since I joined Power Africa in April 2020, the pace of change has accelerated with a new **urgency to address climate change** and race to net zero. The rapid deployment of clean energy technology, including green hydrogen and battery storage, is critical to meet our shared human development, climate, and economic goals. Our job at Power Africa is to power potential through access to clean, reliable energy, helping people and businesses in sub-Saharan Africa not merely keep pace, but thrive. Indeed, this report spotlights the many ways in which **Power Africa and our partners are Powering Potential**.

As I prepare to leave my role as Coordinator for my next USAID assignment, and as Power Africa enters its 10th year, I am optimistic. Our team is talented, committed, and focused on the mutually reinforcing goals of addressing energy access and climate change. Our programming is adaptive and centered on meeting local needs. And our partnerships are stronger than ever. **Together, we are Powering Potential across the continent.**

To more Lights On!

Finally, we will help channel more U.S. private sector investment to the vast growth industries across African nations, including in clean energy, in health care, in the digital sectors. We're doing that through programs like Power Africa, which has already connected more than 165 million people in sub-Saharan Africa with cleaner, more reliable electricity.

– Secretary of State Antony J. Blinken, U.S.-Africa Business Forum, December 14, 2022

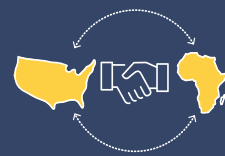
Power Africa Priorities



Ending Energy Poverty



Accelerating a Carbon-Free Future



Bolstering U.S. and African Private Sector Innovation

Advancing sub-Saharan African development through universal access to clean energy



POWERING HEALTH AND DIGITAL CONNECTIVITY

Through the **Health Electrification and Telecommunication Alliance**, Power Africa is assembling the world's leading renewable energy, digital technology, and health solutions providers to electrify and digitally connect 10,000 health facilities, enable modern medical services, and improve lives.

The **Health Electrification and Telecommunication Alliance (HETA)** is a five-year cooperative agreement that utilizes one of the largest Global Development Alliance models in USAID history. HETA will invest USAID resources to leverage more than \$150 million of private sector resources from companies, organizations, and foundations in the healthcare, energy, and telecommunications sectors.

As a White House priority under the Partnership for Global Infrastructure and Investment, **HETA will address the lack of reliable electricity faced by more than 100,000 public health facilities in sub-Saharan Africa.** In communities where these facilities operate, basic health services such as vaccinations, maternal and child wellness services, HIV/AIDS and tuberculosis treatments, COVID-19 mitigation, and digital record-keeping are limited or unavailable. In short, insufficient power denies access to life-saving care.

Through HETA – and with dedicated design and operational support from USAID's global health program, African government partners, and alliance members – health facilities will be outfitted to provide renewable energy and digital connectivity to improve healthcare service delivery and support U.S. commitments to advance the Sustainable Development Goals.



PHOTO: Kofi Atakora Afriyie

SUSTAINABLE ENERGY FOR ALL



PHOTO: USAID/Tanzania

Partnering to Accelerate Health Facility Electrification

Power Africa and our partner Sustainable Energy for All collaborated via the Multilateral Energy Compact on Health Facility Electrification (launched in 2021) and the Powering Healthcare Africa Project to develop several timely resources to power health across the continent:

- ▶ **Powering Healthcare Market Assessment and Roadmap for Nigeria:** Published in March 2022, this document provides an analysis of the energy access data gap in Nigeria's health sector, and identifies appropriate technologies, business models, and a forward-looking roadmap with actionable steps.
- ▶ **Powering Healthcare Impact:** This factsheet shows the pathway (as well as the existing data gaps) between reliable electrification and improved health outcomes.
- ▶ **Powering Healthcare Intervention Heatmap:** This heatmap is designed to help sector stakeholders identify opportunities for coordination and collaboration, as well as provide a detailed overview of sectoral progress towards the ambitions and targets under the Multilateral Energy Compact for Health Facility Electrification.

Power Africa invested **\$800,000 of seed capital** into the **Universal Energy Facility (UEF)**, a multi-donor, results-based financing facility administered and implemented by SEforAll. The UEF is supporting mini-grid development and solar home systems in Benin, Madagascar, and Sierra Leone. This year, the UEF verified its first set of electricity connections in Madagascar. The UEF aims to deliver 1.3 million electricity connections while averting 4.8 million tons of carbon emissions by the end of 2023.



DRIVING ENERGY ACCESS



PHOTO:
Power Africa

Cultivating Change: Increasing Women’s Access to Off-Grid Productive Use of Energy for Agriculture

In Tanzania, three-quarters of the population is involved in agriculture, and more than 80 percent of economically active women work in the agricultural sector. To understand the needs and challenges of female farmers in accessing energy for productive uses, Power Africa helped Simusolar, an off-grid energy solutions provider, conduct a gender-focused market assessment. The resulting Power Africa roadmap for developing a market-focused gender strategy helps clean energy companies make gender equality a business priority.



PHOTO:
Left: Bob Geile, WTYSL
Right: Feed the Future

Expanding Grid Access for Residents of Rural Senegal

Continued collaboration between Power Africa and the national electricity utility, Senelec, connected more than 200,000 consumers to the national grid.

Scaling Up Solar-Powered Productive Uses of Energy in Liberia

Power Africa, through USAID, awarded nearly \$670,000 in grants to five solar energy companies operating in Liberia. This funding will help the grantees distribute solar-powered productive use of energy technologies that enable users to harvest, process, and preserve agricultural produce and fish, or to power small businesses.

Mapping the Future of Electricity Access in Côte d’Ivoire

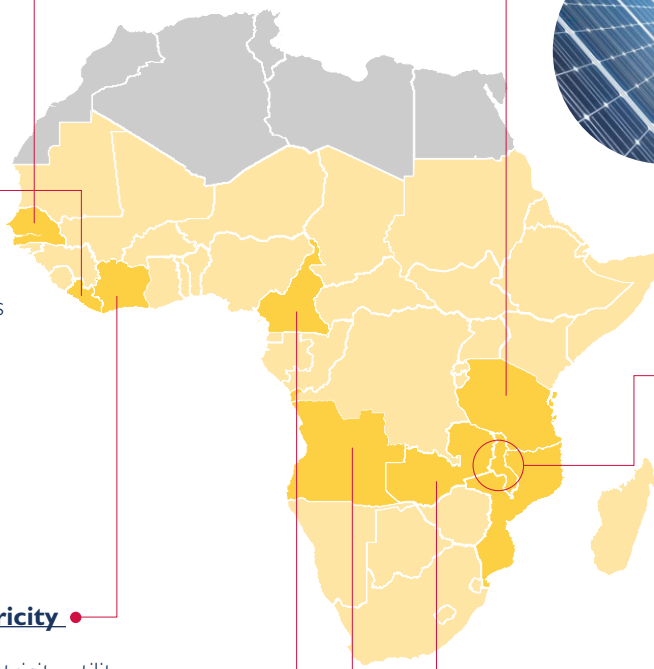
Power Africa and the national electricity utility harnessed data to accelerate Côte d’Ivoire’s progress toward universal electricity access.

Bringing Cleaner, More Reliable Cooking Solutions and Electricity to Northern Cameroon

In northern Cameroon, connecting to the grid is too expensive for most residents, leaving few with access to electricity. Today, homes and businesses are powered by an off-grid energy solution made possible through a USAID-funded Power Africa grant focused on distributed electricity services and modern cooking fuels.

Advancing a Connected Power System in Angola

Power Africa and the [African Development Bank](#) partnered with the Government of Angola to build modern, reliable transmission infrastructure to deliver electricity from power stations to those who need it.



Mapping Market Expansion for Off-Grid Companies in Southern Africa

Power Africa’s publicly available route-to-market tools provide geospatial data and techniques to help solar home system companies prioritize geographic markets. Reaching the right customers means increasing energy access for homes and businesses.

Connecting 1 Million Zambians to Off-Grid Power

In March, development partner [Sweden](#) celebrated the connection of one million people in Zambia to first-time and improved electricity under the [Beyond the Grid Fund for Africa](#) (BGFA) – a program supported by Power Africa. To date, Power Africa has provided in-kind technical assistance worth \$4.5 million to help operationalize BGFA and develop a pipeline of commercially viable projects within the framework of the program. BGFA supports energy service providers in multiple countries, including Burkina Faso, the Democratic Republic of the Congo, Liberia, Mozambique, Uganda, and Zambia.

	2022 Highlights		Where We Work
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POWERING A JUST ENERGY TRANSITION

In South Africa, Power Africa is working with municipal leaders and local organizations to facilitate a just energy transition that promotes a future of equitable social and economic benefits from renewable energy.

Through South Africa's Just Energy Transition Partnership (JETP) announced at COP26, the U.S. Government joined the governments of France, Germany, and the United Kingdom, as well as the European Union, to collectively pledge \$8.5 billion to support South Africa's transition away from coal.

To support South Africa's decarbonization journey, Power Africa helped design and implement training sessions to **empower energy sector decision-makers and change agents to create conditions for a just energy transition**. In collaboration with the South African Local Government Association, Power Africa trained 64 leaders from 18 municipalities in Mpumalanga Province, South Africa's coal country, on how to integrate JETP into their municipal plans and how to recognize opportunities related to the energy transition.

In collaboration with African Women in Energy and Power and the Wits Business School's African Energy Leadership Center, Power Africa is **empowering women on renewable energy planning**. In 2022, 34 women representing municipalities, the national electricity utility, government departments, and NGOs completed training on renewable energy planning and business opportunities in new energy value chains, empowering them to lead the transition.

Power Africa's transaction advisory and financial modeling support is assisting the City of Cape Town to secure supply from independent power producers. Power Africa is also assisting the city's plans to develop 270 MW of solar projects.



Watch the video



Propelling South Africa's Clean Power Progress

Power Africa support to South Africa's Renewable Energy Independent Power Producer Procurement Program helped the Karusa and Soetwater wind farms reach financial close. Developed by Power Africa partner Enel, both sites came online in 2022 and are generating a combined 280 MW of clean electricity.

ACCELERATING A CARBON-FREE FUTURE



PHOTO: Helga Wenhold

Thanks to the training, we have the tools. Now, it's time to go and seek the opportunities.

– Mpho Masenya, Director, Rand Industries



LEADING ON CLIMATE CHANGE

Power Africa assistance equips our African government partners to cut energy-related emissions to meet decarbonization and climate goals. In 2022, Power Africa investments in renewable energy avoided 7.7 million tons of CO₂ emissions, the equivalent of burning 8.5 billion pounds of coal.



PHOTO: USAID

➤ **Switching on West Africa's First Solar-Hydro Hybrid Plant:** Power Africa assisted Ghana's Bui Power Authority to operationalize the first 50 MW phase of its 250 MW solar-hydro hybrid project, which doubled Ghana's grid-connected solar energy and is expected to cut greenhouse gas emissions by more than 47,000 tons per year.



The project generates renewable solar energy that can operate during the day to complement existing hydropower production. The facility, which also features a 1 MW floating solar component, is expected to be completed in 2023.

➤ **Catching Sunshine on the Kenyan Coast:** The 40 MW Malindi solar plant, developed by Power Africa partner Globeleq, is capable of delivering electricity to up to 250,000 residential customers and will avoid 44,500 tons of CO₂-equivalent emissions annually. Early Power Africa assistance secured a bankable power purchase agreement. British International Investment, the development finance institution of Power Africa partner the United Kingdom, provided debt financing.



RENEWING EUROPEAN UNION PARTNERSHIP TO ADDRESS CLIMATE CHANGE THROUGH CLEAN ENERGY

USAID Administrator Samantha Power and European Commissioner for International Partnerships Jutta Urpilainen signed a new memorandum of understanding (MOU) on Power Africa. This agreement renews Power Africa's partnership with the European Union and enables closer collaboration on sustainable energy solutions to address poverty, climate change, and energy insecurity in sub-Saharan Africa. Looking ahead, this step advances our shared commitment to fulfill the G7's Partnership for Global Infrastructure and Investment agenda.



PHOTO: USAID

Through large, multi-year initiatives like Power Africa or Feed the Future, dedicated humanitarian responses, and the individual actions of people throughout our missions and bureaus, this Agency has fought to protect our planet and the people hurt most by climate change, even during times when those efforts were difficult, deprioritized, or diminished.

– Samantha Power, Administrator, United States Agency for International Development



DID YOU KNOW? In addition to nearly **3,800 MW** of Power Africa-supported **renewable energy** added to the grid since 2013, Power Africa also works directly with transmission and distribution utilities to reduce energy losses. These and other **energy efficiency** measures help countries power economies and livelihoods with fewer resources. **Using less is climate-smart!**



BOLSTERING U.S. AND AFRICAN PRIVATE SECTOR INNOVATION

CONNECTING U.S. AND AFRICAN COMPANIES AND INVESTORS TO MARKET OPPORTUNITIES

The **U.S.-Africa Clean Tech Energy Network (CTEN)** connects U.S. and African cleantech energy companies and investors to market opportunities where project-ready technology can increase access to reliable electricity.

Guided by the goal of ending energy poverty in sub-Saharan Africa, **CTEN will introduce U.S. cleantech energy firms to specific deal opportunities in African markets and promote direct investment in African cleantech enterprises.** Thus, CTEN will activate and facilitate a two-way ecosystem of cleantech energy companies, business associations, buyers, partners, investors, entrepreneurs, innovation labs, and government stakeholders to unlock innovation and bankable deals.

Launched in collaboration with Prosper Africa at the U.S.-Africa Leaders Summit in December 2022, CTEN aims to facilitate up to **\$350 million** in deals within the first five years. This initial project portfolio will feature technology that advances distributed renewable energy, long-term energy storage, run-of-river hydropower, and smart metering.

Learn More



PHOTOS: Bob Geile, WTYSL



Two-way CTEN activities/ offerings include:

Matchmaking, pitch sessions, workshops, roundtable discussions, webinars, and other events that support business linkages

Technical assistance and transaction advisory services

Market intelligence and network management

Communications, marketing, and promotional support



DFC Invests \$40 Million in Energy Entrepreneurs

The U.S. International Development Finance Corporation (DFC) is committing up to \$40 million in financing to the Energy Entrepreneurs Growth Fund (EEGF). EEGF offers catalytic financing and technical assistance to early- and growth-stage companies that will increase access to clean, safe, dependable, and affordable energy for off-grid households and businesses in sub-Saharan Africa. The fund's investments are expected to provide access to clean energy for an estimated five million people.

THE POWER OF PARTNERSHIP

One of Power Africa’s greatest contributions is our ability to convene the decision-makers, development partners, investors, and businesses needed to end energy poverty.

Building Malawi’s First Utility-Scale Solar-Plus-Storage Power Project

The 20 MW Golomoti solar power plant is the first of its scale in Southern Africa to include a battery energy storage system (BESS). This critical renewable energy project was switched on in 2022 and is feeding clean electricity into Malawi’s national grid, powering businesses and livelihoods in a country with one of the lowest electricity access rates in Southern Africa. How did Golomoti get from idea to reality? It took a village of public and private sector partnership:



PRIVATE SECTOR PARTNERS		U.S. GOVERNMENT PARTNERS	
JCM Power	Co-developer and Investor	USAID	Transaction advisory to develop a bankable financial model; technical assistance to optimize BESS
Private Infrastructure Development Group	Co-developer and Investor	U.S. Trade and Development Agency	\$700,000 feasibility study to determine project size and possibility of BESS
		Millennium Challenge Corporation	\$350 million Malawi Compact supporting policy and institutional reforms, investment in national transmission network
		U.S. International Development Finance Corporation	\$25 million loan approved to Golomoti Solar
		U.S. Department of State (U.S. Embassy Lilongwe)	Advocacy and bilateral relations

Power Africa partner d.light teamed up with African Frontier Capital to develop a **\$238 million financing vehicle** that will provide flexible working capital, allowing d.light to supply consumer financing and expand access to its solar home systems, appliances, and smartphones.

MCC invests in Africa’s potential

The Millennium Challenge Corporation (MCC) signed compacts with the governments of Lesotho and Malawi to improve infrastructure and support economic growth. MCC committed \$300 million to Lesotho and \$350 to Malawi. In addition, MCC and the governments of Benin and Niger have signed the first regional compacts, totaling \$504 million, with additional contributions of \$15 million from Benin and Niger, to support regional economic integration, trade, and cross-border collaboration.



Scaling Energy Access Markets

USAID collaborated with Power Africa partners Shell Foundation and the Government of the United Kingdom to implement the **Scaling Energy Access Markets in Africa** (SEAM) activity, which concluded in 2022.

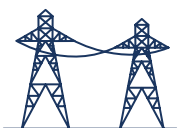
SEAM’s ambitious goal was to accelerate growth in Africa’s off-grid energy market and bring clean, modern, affordable electricity to 20 million households.

SEAM helped to catalyze the off-grid sector and enabled pay-as-you-go energy companies to enter new markets, leading to increased access for millions of people. The activity also spurred new investment facilities and funds and underscored the need for market research and data to improve efficiency.



PHOTO: Shell Foundation

SEAM RESULTS, 2016–2022



3.1 MILLION connections



15 MILLION PEOPLE with first-time electricity



386,000 TONS OF CO₂ reduced



45,000 JOBS created



\$441 MILLION OF INVESTMENT leveraged

POWERING POTENTIAL

Expanding access to energy for productive uses improves livelihoods. **Across sub-Saharan Africa, Power Africa and our partners are powering potential by delivering clean, reliable electricity to millions of people and businesses.** For three entrepreneurs in rural Rwanda, the local health clinic is an anchor point for community-wide electrification. Meet Violette, Gedeon, and Sarah and learn how access to reliable and clean electricity is recharging their businesses and creating opportunities for growth.



Violette Niwegisubizo
Tailor



“Before we got electricity, I used to struggle with being able to make a few designs. But when we got electricity, it got easier for me. I am now able to make every sort of design on my own. It has really helped me to progress.”

Meet Violette
via video



Gedeon Bimenyimana
Welder



“Now that I have electricity, things have gotten better. I no longer spend money on transport to go to work far away. I am now closer to my family. Thirdly, clients are now able to properly see the service that I offer, which makes my work easier.”

Meet Gedeon
via video



Sarah Nzayituriki
BoxKeeper,
OffGridBox



“To get clean water you would have to go far away but that has changed since the OffGridBox is now here. It has also brought light to this area. I have also benefited financially from it. Through the salary that I get monthly, I am able to cover my needs and get to help my family.”

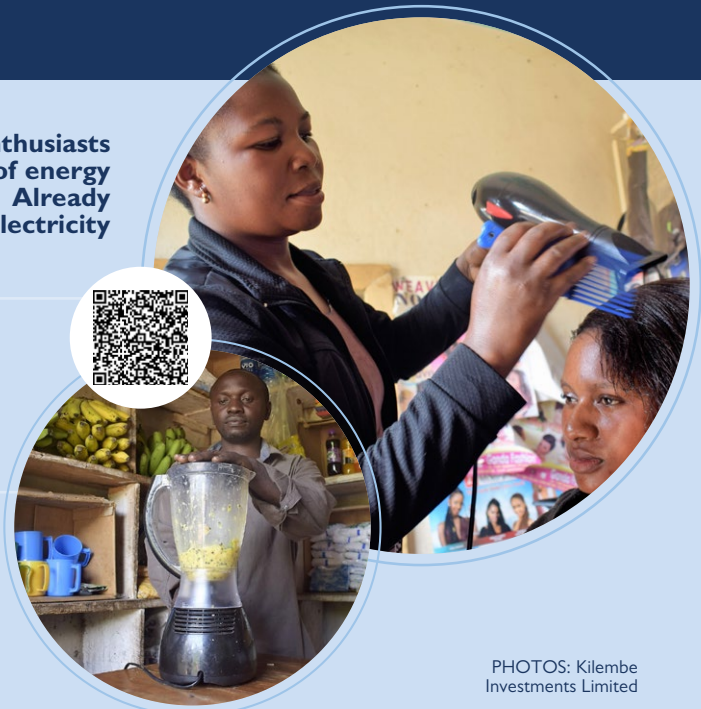
Meet Sarah
via video

PHOTOS: Jonadab Aturemyebushya, Wavemaker

Power Africa and Ugandan company Clean Energy Enthusiasts facilitated training on the opportunities for productive use of energy for 280 entrepreneurs in the Western Region of Uganda. Already business savvy, these go-getters are utilizing first-time electricity access to expand their service offerings.

Salon owner **Jones Biira** grew her client base after word spread that she has powered equipment, like hair dryers and clippers.

Shopkeeper **Anatoli Masereka** expanded his business after he bought a blender to process fresh juices more quickly and easily for customers.



PHOTOS: Kilembe Investments Limited

POWERING THE POTENTIAL OF WOMEN IN ENERGY

Training the Next Generation of Women Energy Leaders

In keeping with the African proverb, “Educate a woman and you educate a nation,” Power Africa established the Energy Sector Women’s Leadership Initiative (ESWLI) to address the shortage of women leaders in the industry. **Launched in Nigeria**, ESWLI training courses equip women with essential skills and knowledge to thrive and grow in their careers. Last year, **more than 700** talented junior-level and mid-level women energy professionals from Nigeria, Ghana, Liberia, and Sierra Leone graduated from the program. Nearly one-third of ESWLI alumni were promoted or accepted new positions, and many graduates negotiated higher salaries and began mentoring their colleagues.



Meet Marwa, Idara, and Ojinika to learn more about ESWLI and its real-world impact.



PHOTOS:
Emily Allen for USAID



Leaving No One Behind: A Commitment to Gender Equality in Rural DRC

The Government of the Democratic Republic of the Congo (DRC) tasked its rural electrification agency (ANSER) to meet the ambitious goal of connecting an additional 15 million people to electricity by 2025. Power Africa assistance, through USAID and in collaboration with the Tony Blair Institute for Global Change, **helped ANSER develop a gender strategy to deliver equal benefits of electrification** to the women and men of these communities. In a country of more than 90 million inhabitants with an electricity access rate of just 20 percent, the strategy empowers ANSER to serve millions of people who may otherwise have been unintentionally excluded.

“We want women to create enterprises, be entrepreneurs, and develop the value chain so that this allows both men and women to benefit from electricity access.”

– Idesbald Chinamula, Director General, ANSER

Measuring the Impact of Gender Interventions

Utilities, developers, investors, and other energy sector actors are increasingly looking at gender considerations to improve performance, better meet the needs of their beneficiaries, and/or enhance their development impacts. **Power Africa’s Gender and Energy Indicator Catalog** helps organizations and institutions measure the effectiveness of their gender interventions. The catalog outlines a range of gender-equality metrics designed to be used across the industry, all of which are aligned with the **2X Challenge Criteria**.



Wiring New Career Paths in Rural Ghana

Power Africa collaborated with Ghana’s Energy Commission and the Dabokpa Technical Institute to **certify 44 electrical wiring professionals – including 10 women – through the USAID Wiring Artisans Scholarship Program**. The month-long course trained participants on leading industry practices and methods for residential wiring. Wiring installed by uncertified electricians can endanger lives and lead to increased costs for building owners. Through this program, Power Africa is helping to increase the availability of certified electricians and creating new career paths for women nationwide.

CREATING CONDITIONS TO ATTRACT PRIVATE SECTOR INVESTMENT

In 2022, Power Africa mobilized \$234 million in investment and advisory support to help off-grid solar companies gain access to finance and secure capital for growth.



Since 2014, Power Africa has mobilized more than **\$948 million** in investment for clean energy projects beyond the grid.

PHOTO: SparkMeter

- ▶ **Strengthening Power Grids in Somalia with Digital Technology:** Power Africa introduced [SparkMeter](#), a U.S.-based private sector partner, to Somali electricity service providers, resulting in a pilot project to install SparkMeter's technology on a 20,000-customer electricity distribution network. This type of digital technology solution can improve technical and financial performance at utilities, which boosts the confidence of international independent power producers and can attract investment in energy infrastructure.
- ▶ **Bridging Data and Policy to Plan Rwanda's Energy Future:** With technical assistance and training from Power Africa, Rwanda's key energy institutions can now create evidence-based resource assessments and least-cost power development plans that will inform power purchase agreements between the government and private sector energy developers.
- ▶ **Powering Kenya's Long-Term Energy Goals:** Power Africa worked closely with policymakers and utilities to facilitate comprehensive self-assessments and strategic planning. Using the USAID human and institutional capacity development approach, Power Africa led a multi-year process to strengthen organizational leadership and governance and to encourage better energy sector investments.
- ▶ **Promoting Interconnected Electricity Networks in West Africa:** In coordination with the Tony Blair Institute, Power Africa is collaborating with the Gambia River Basin Development Organization (OMVG) to create a regional electricity market and facilitate private investment in electricity generation and battery storage. The project, which aligns with the Partnership for Global Infrastructure and Investment, provides the infrastructure necessary for private companies to build renewable power plants and deliver cleaner, lower-cost electricity to consumers.

Investing in Clean Technology to Turn Lights On in Rural Burundi

Burundi is one of the world's lowest rural electrification rates. Only four percent of rural residents have access to reliable electricity—a major constraint on human development and economic growth.

With years of experience developing hydropower projects and mini-grids in East and Southern Africa, Power Africa partner [Virunga Power](#) is well placed to bring new electricity infrastructure to millions in this low-income nation.

In December, [Gridworks](#), an investor in Africa's electricity networks and a Power Africa partner, [announced a \\$50 million investment in Virunga Power](#) to help accelerate Virunga's portfolio in Burundi and beyond.



PHOTO: Gridworks

SPOTLIGHT ON NIGERIA



Scaling Innovative Solutions to Boost Energy Access

USADF / All On Nigeria Off-Grid Energy Challenge

The [United States African Development Foundation](#) (USADF), a Power Africa partner, and private sector partner [All On](#) continued their multi-year Nigeria Off-Grid Energy Challenge with awards to 13 off-grid energy innovators. Each wholly Nigerian-owned company received **\$100,000** of convertible debt and grants from USADF, All On, and the [Rockefeller Foundation](#). Five of the 13 award recipients feature women in leadership positions. The competition awards blended finance packages (half grant capital, half convertible debt) to scale innovative off-grid solutions to power unserved and underserved areas in Nigeria. To date, the Challenge has awarded **\$5 million to 50 companies**.

Last year, Nigeria committed to become carbon neutral by 2060. In support of this ambitious goal, **Power Africa is assisting the Federal Government of Nigeria to implement the Nigeria Energy Transition Plan** by identifying pipelines of clean energy and energy efficiency projects that will help Nigeria reach its target.

Closing the “Metering Gap” to Deliver Reliable, Affordable Electricity

Nigeria’s power sector continues to wrestle with limited functionality, leaving many homes and businesses without reliable electricity. Nigeria’s electricity distribution companies (DISCOs) struggle with aggregated technical, commercial, and collection losses. Without a network of connected power meters, the DISCOs often rely on estimated billing, an inaccurate practice that customers do not trust. Installing electricity meters is the most effective way to make customer billing more accurate, build customer trust, and increase willingness to pay.

Power Africa is providing technical assistance to two national programs that aim to collectively install 6.5 million electricity meters. Electricity meters help regularize customers, provide more robust electricity consumption data, and enable DISCOs to better plan for grid strengthening. To monitor the installations, Power Africa developed the Meter Installation Performance Dashboard, which allows Nigeria’s energy regulator to assess each DISCO’s progress toward its goals.



Nigeria’s DISCOs have installed **1.6 MILLION smart meters**



Power Africa won the **Most Impactful International Development Agency Award** at the 2022 Nigeria Power Sector Awards Limited!

Achieving 750,000+ New On- and Off-grid Connections in Nigeria
Since 2013, Power Africa support has helped 3.1 million homes and businesses connect to cleaner electricity, reducing carbon emissions and supporting economic growth.

STRENGTHENING AND EXPANDING GRIDS TO DELIVER MORE POWER TO PEOPLE

Preparing Malawi's Grid for a Renewable Energy Future

Adding renewable energy sources like solar and wind to a country's power system has many advantages, including quick construction times and zero carbon emissions. However, the more solar and wind energy added to the grid, the more challenges grid operators face to keep the system in balance. **In Malawi, Power Africa trained grid operations specialists** at the national electricity utility, ESCOM, on processes to better **plan, manage, and operate the grid with increasing amounts of variable renewable energy**. Power Africa presented real, relevant data from Malawi's JCM Salima solar plant to show how cloud coverage and weather patterns affect energy output, as well as case studies of how utilities have managed increased shares of renewables. The techniques highlighted in this training prepared ESCOM to manage a climate-smart grid in the future.

Advancing Transmission Networks and Regional Power Trade

In many sub-Saharan African countries, electricity generation is increasing, but transmission and distribution networks do not have capacity to deliver power to consumers. Some countries already have more supply than demand, while neighboring countries are sitting in the dark. Power Africa helps our African government partners improve electricity grids and unlock cross-border electricity trade for broader regional electricity access and economic benefit. In the past year, Power Africa:

- ▶ Provided legal and technical assistance to secure a **power purchase agreement between Ethiopia and Kenya for 200 MW** of energy, with an expected eventual increase to 400 MW
- ▶ Supported development of the Shango–Mbarara 220 kV transmission line, which will enable **electricity trade between Rwanda and Uganda**
- ▶ Partnered with the **African Development Bank** and the Government of Angola to **build critical transmission infrastructure in Angola**
- ▶ Trained grid technicians to prepare for the Mozambique–Malawi interconnector, which will **link Malawi to the Southern Africa Power Pool and facilitate increased electricity access** as well as regional power trade



Embracing Efficiency to Help Kenya Power Do More with Less

A 15 percent cut to Kenya's electricity tariff eased costs for consumers, but reduced revenue at the national electricity generation utility, Kenya Power. With less revenue, the utility could not adequately invest in grid upgrades or operational improvements.

With Power Africa support, Kenya Power embraced a comprehensive loss-reduction strategy to improve operational efficiency and increase profitability. Through strategic support and technical on-the-job training, Kenya Power improved energy accounting, revenue collection, and monitoring of large power users. In the Nairobi region, Kenya Power reported a **141 percent increase in revenue** between 2019 and 2022. Revenue from new connections, which are crucial to both the economy and the utility's ability to operate sustainably, contributed to a significant seven percent increase in annual energy sales. Kenya Power's workforce now boasts strengthened capacity to replicate such initiatives at the regional and national levels.

Power Africa's loss-reduction approaches...have helped increase efficiency and organizational performance.

– Robert Mugo, Chairman, Kenya Power
Loss-Reduction Task Force

PHOTO: Mwangi Kirubi

POWER AFRICA PARTNERS COMMIT TO CLIMATE AND ENERGY ACCESS

At the U.S.-Africa Leaders Summit Business Forum in December 2022, **Power Africa partners announced new deals and commitments to fund and promote energy access and climate-smart programs:**

Africa50, the project preparation arm of the **African Development Bank**, announced the establishment of its **Alliance for Green Infrastructure Africa Fund** to accelerate Africa's just and equitable energy transition. **USTDA** will contribute project preparation and development as an implementing partner.

OnePower finalized an agreement with Lesotho's Ministry of Energy for the country's first privately financed solar project. The **20 MW, \$25 million solar project** will light up 50,000 homes. **USTDA** supported the project through a **\$600,000 grant** for local capacity-building to develop and maintain this asset.

USTDA committed to:

- Fund a feasibility study for **GreenCo Power Services Limited** to develop and pilot technology for a **utility-scale battery energy storage project** that could **reduce carbon emissions by 26,000 metric tons per year** and strengthen Zambia's power grid
- Fund a feasibility study to develop a comprehensive and reliable **clean energy solution for a city of two million residents** in the DRC that lacks connectivity to the national power grid
- Provide a technical assistance grant to an Ivorian energy company to develop a **25 MW biomass plant that would supply Côte d'Ivoire's national grid** by transforming agricultural waste from the country's flourishing cotton sector into energy
- Award a grant to a Sierra Leone-based green infrastructure developer to fund studies for a **27 MW run-of-river hydroelectric plant at Betmai Falls**, increasing access to reliable power generated through renewable energy

Symbion Power and **Natel Energy**, through **MyHydro**, are investing **\$1 billion over the next 10 years** to install fish-safe hydropower-based distributed systems with associated mini-grids at low cost across Africa.



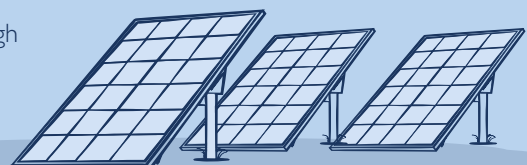
The **Export-Import Bank of the United States (EXIM)** is financing **\$7.4 million** for Nigeria's Sapele Power Plc to purchase **energy storage systems** from the U.S. firm **ESS, Inc.**

The **U.S. International Development Finance Corporation (DFC)** committed to:

- **\$25 million** direct investment to finance a **20 MW solar power plant and battery energy storage system** in Malawi
- Up to **\$40 million** equity investment in the **Africa Renewable Energy Fund II** to support renewable energy projects in Angola, Cameroon, Kenya, Madagascar, and Malawi
- Up to **\$40 million in financing to the Energy Entrepreneurs Growth Fund** to assist emerging companies that could increase access to clean, off-grid energy for five million people
- **\$5 million** loan portfolio guarantee to support micro, small, and medium enterprises in the DRC, with a focus on **agriculture and renewable energy investments**, in coordination with USAID and Sweden
- **\$100 million** debt investment in the Mirova Gigaton Empowerment Fund to finance distributed clean energy transition companies and projects to build **climate-friendly energy solutions**

USAID committed to:

- Launch the **U.S.-Africa Clean Tech Energy Network (CTEN)** in partnership with Prosper Africa. CTEN is a collaboration among the U.S. Government, U.S. cleantech energy companies, and African energy stakeholders that is expected to mobilize **\$350 million in deals**
- Operationalize the **Health Electrification and Telecommunications Alliance**, a **\$150 million** public-private partnership to electrify 10,000 health facilities in sub-Saharan Africa, bolster pandemic resilience, advance digital connectivity, and decarbonize the health sector
- Support **women's participation in the energy sector** through training, awareness building, and connecting skilled women with opportunities in renewable energy companies



INVESTING IN CLIMATE-SMART INFRASTRUCTURE IN ANGOLA



Through the U.S. Department of Commerce, Power Africa helped facilitate a \$1.95 billion commercial agreement between U.S.-based clean energy solutions provider Sun Africa and Angola's electricity generation utility. Announced by President Biden as part of the Partnership for Global Infrastructure and Investment, the deal includes plans for 65 solar mini-grids, two utility-scale solar plants, energy storage systems, small home systems, and associated transmission and distribution infrastructure. The partnership is expected to provide energy for 2.9 million Angolans, while supporting Angola's climate goals and creating new markets for American technologies.



Learn more

PHOTO: UNHCR/Diana Diaz

IMPROVING LIVES FOR DISPLACED PEOPLES

Power Africa's \$1 million investment into the Smart Communities and Coalition Innovation Fund has benefited over 4,185 people. Awards made in the second competitive financing window will help three companies increase energy access by coupling it with education loans, increase access to clean and safe drinking water by setting up Smart Taps in refugee settings, and improve digital infrastructure to increase connectivity and create jobs.

RESULTS

1,232

People with new or improved access to energy

2,700

People with new or improved access to connectivity

253

People with new or improved access to digital tools

PRIORITIZING FOR THE DECADE AHEAD

We're standing at an inflection point in world history. We have the ability to invest in ourselves and build an equitable clean-energy future and in the process create millions of good-paying jobs and opportunities around the world...

– President Joseph R. Biden, COP26 Leaders' Summit, November 2021

This clean-energy future is critical for sub-Saharan Africa, where over 600 million people lack access to electricity. This is the decade. This is our window to raise ambitions and deliver on the dual mandate to transition to a worldwide clean economy and to electrify Africa. Alongside our partners, we have already made significant progress in an ever-changing energy ecosystem.

Across all objectives and throughout all of our work, we are prioritizing gender-smart and socially responsible investment. We are working with over 200 U.S., African, and global partners to plan and realize a just and inclusive energy transition. We are making connections. **We are powering potential.**

To respond to this challenge and seize new opportunities, we adapted our strategy to advance sub-Saharan African development through universal access to clean energy. Looking ahead to the next decade, we are focusing on three objectives:

1. Ending Energy Poverty
2. Accelerating a Carbon-Free Future
3. Bolstering Competitive Private Sector Investment and Innovation



PHOTO: Fraser Schenck, Current Media

CONNECTING TO PEOPLE AND PLACES

After years of virtual interaction, Power Africa teams ventured out to reconnect with partners, meet new friends, and drive activities that spur access to clean energy for all. At the Enlit Africa event in Cape Town, South Africa, we joined the U.S. Commercial Service at the Power Africa U.S. Pavilion to **facilitate new two-way trade deals between U.S. cleantech energy companies and African counterparts:**

- ▶ **Terabase Energy** secured multiple deals for their software platform.
- ▶ **Capstone Energy** and **MBHE Group** (South Africa) agreed to pursue solar PV and gas micro-grids.
- ▶ **Progression Energy** signed an MOU with South Africa's Council for Scientific and Industrial Research to study the feasibility of offshore wind projects.
- ▶ **Rife International** and **Sunelex** (South Africa) will explore utility-scale solar and micro-grid projects.



Enlit Africa

Africa Energy Forum 2022

UN Climate Change Conference (COP27)

Sustainable Energy for All Forum

Watch the video

U.S.-Africa Leaders Summit

Global Off-Grid Solar Forum and Expo

In May 2022, Power Africa visited Ampersand in Rwanda. Ampersand is Africa's first and leading integrated electric motorcycle and transport energy solution. The Power Africa team tested out the vehicles and experienced firsthand the importance of this innovation.

NEW RESOURCES



UNDERSTANDING ENERGY STORAGE HANDBOOK

Power Africa is proud to announce the release of *Understanding Energy Storage*, the latest addition to our Understanding handbook series. This new handbook provides an overview and use cases of relevant energy storage technologies; a roadmap for modifying regulatory environments to enable the adoption of energy storage technology; and an overview of how to plan, procure, and finance energy storage solutions.

This manual is a collaboration between the Endangered Wildlife Trust and Power Africa. It aims to minimize negative interactions between wildlife and electrical infrastructure in Southern Africa, thereby reducing operational costs to utilities, improving the quality of electricity supply to economies, and minimizing the impact on wildlife in the region.

SOUTHERN AFRICA WILDLIFE GUIDE

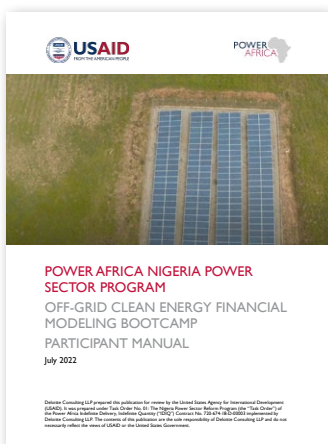


PUBLIC-PRIVATE PARTNERSHIP RESOURCE LIBRARY

With support from the **U.S. Department of State's Bureau of Near Eastern Affairs**, Power Africa and the **U.S. Department of Commerce's Commercial Law Development Program** created a resource library on infrastructure public-private partnerships (PPPs). This resource library includes 28 on-demand webinars led by renowned global experts detailing the PPP process. Each webinar is designed to help decision-makers navigate and understand the key concepts of PPPs.

DISABILITY INCLUSION TOOLKIT FOR NIGERIA'S POWER SECTOR

Power Africa's core implementation approach fosters an inclusive environment for all, including persons with disabilities. Power Africa's *Disability Inclusion Toolkit for Nigeria's Power Sector* outlines strategies and tools address barriers to full participation.



OFF-GRID CLEAN ENERGY FINANCIAL MODELING BOOTCAMP

Originally designed for 35 participants, Power Africa's Off-Grid Clean Energy Financial Modeling Bootcamp received over 1,000 applications. The sheer volume of applicants demonstrated the need for more market training and the value of providing skills development opportunities. Power Africa opened a second cohort for an additional 100 participants and made the webinars available to the public.

NEW PRIVATE SECTOR PARTNERS



U.S. GOVERNMENT AGENCY PARTNERS



DEVELOPMENT PARTNERS



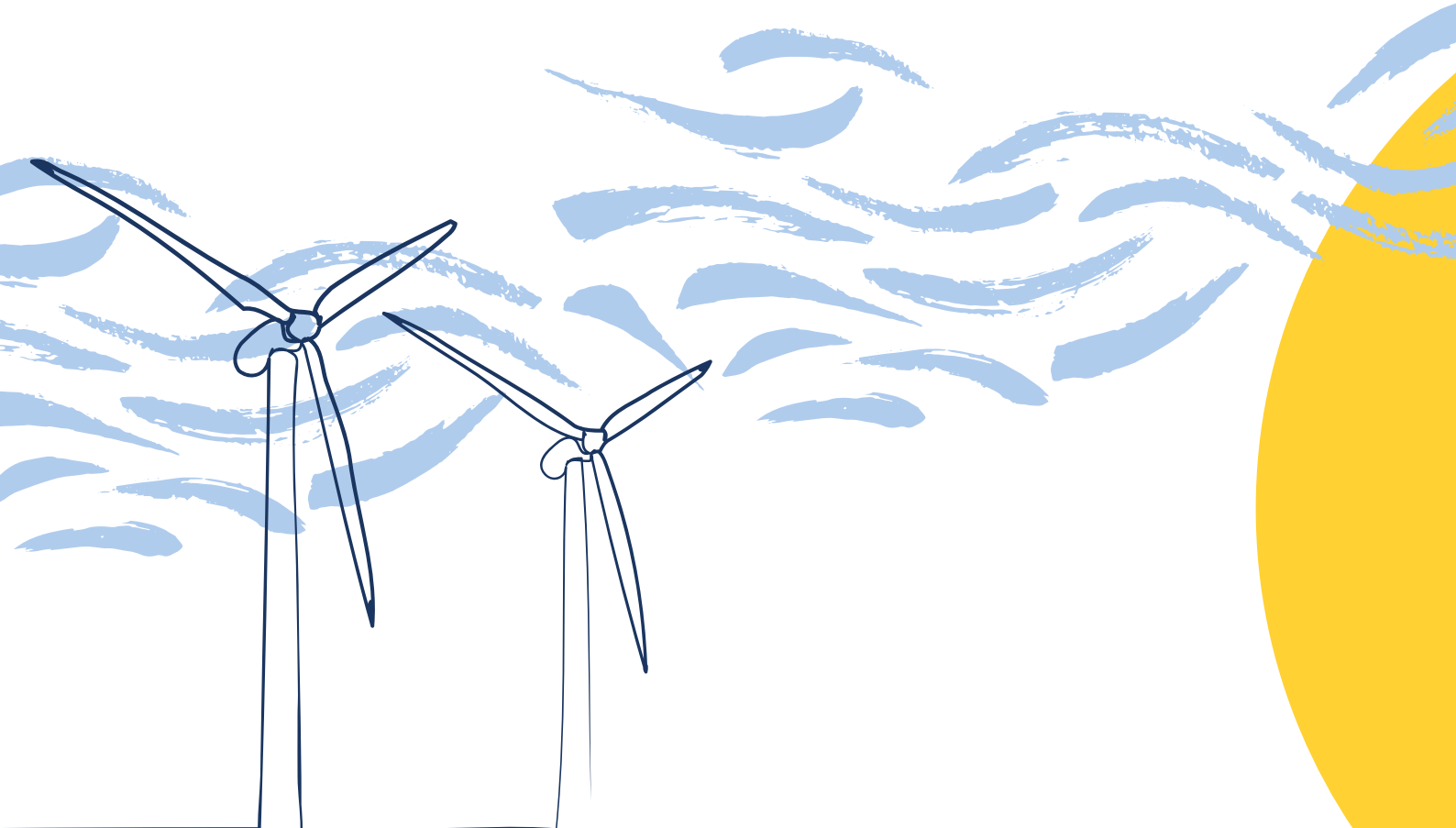
COVER IMAGE

Powering the Potential of Women in Energy is important to the work we do. Mediatrice Hagenimana is an electrical engineer whose USAID-funded apprenticeship at the Rwanda Energy Group resulted in employment. She is one of 184 female apprentices and interns who participated in Power Africa's Women in Rwandan Energy (WIRE) initiative, of whom 111 gained employment in the energy sector.

"I have gained more skills through the WIRE program. It is important for women to participate in the energy sector because gender balance is important."

– Mediatrice Hagenimana, Electrical Engineer

PHOTO: Jonadab Aturemyebushya, Wavemaker



Power Africa is a U.S. Government-led partnership that harnesses the collective resources of over 200 public and private sector partners to double access to electricity in sub-Saharan Africa. Since 2013, Power Africa-supported projects have added nearly 14,000 megawatts (MW) of cleaner and more reliable electricity and more than 34.6 million new power connections for homes and businesses. Power Africa's goal is to add at least 30,000 MW and 60 million connections by 2030.

Follow our progress at [usaid.gov/powerafrica](https://www.usaid.gov/powerafrica).

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