

POWER AFRICA

ANNUAL REPORT JULY 2014



LETTER FROM ANDREW M. HERSCOWITZ

There is no doubt that Africa is on the rise. The continent is home to six of the top ten fastest growing economies in the world. The middle class is growing rapidly and leaders across the continent are creating more opportunities for their people than ever before. Child mortality rates are declining, while life-expectancy is increasing.

Despite these advances, challenges to Africa's rapid pace of growth and development remain. Approximately 600 million Africans still lack access to electricity, affecting their access to quality health care and education, as well as fewer economic opportunities. The needs and the challenges are enormous, but so too are the opportunities.

That is why one year ago, President Obama launched *Power Africa*, and laid out very ambitious goals — to add 10,000 megawatts (MW) of new power generation and expand access to power to 20 million households and businesses. Our long-term aim is to double access to cleaner, reliable and efficient electricity in sub-Saharan Africa. This is not only the right thing to do for the people of Africa, but for the global community who will benefit from an even stronger and dynamic Africa for generations to come.

Through this initiative, we have brought all of the tools and capabilities of the U.S. Government to bear to meet these ambitious targets and to have a meaningful impact on Africa's energy poverty. President Obama and the heads of each of the twelve participating U.S. Government agencies are leading this effort, and USAID has the honor of coordinating *Power Africa* — the first Presidential initiative to be headquartered in Africa.

The U.S. Government cannot achieve these goals alone. *Power Africa's* success will be measured by the strength of our partnerships with African governments, multilateral institutions, donors, and the private sector.

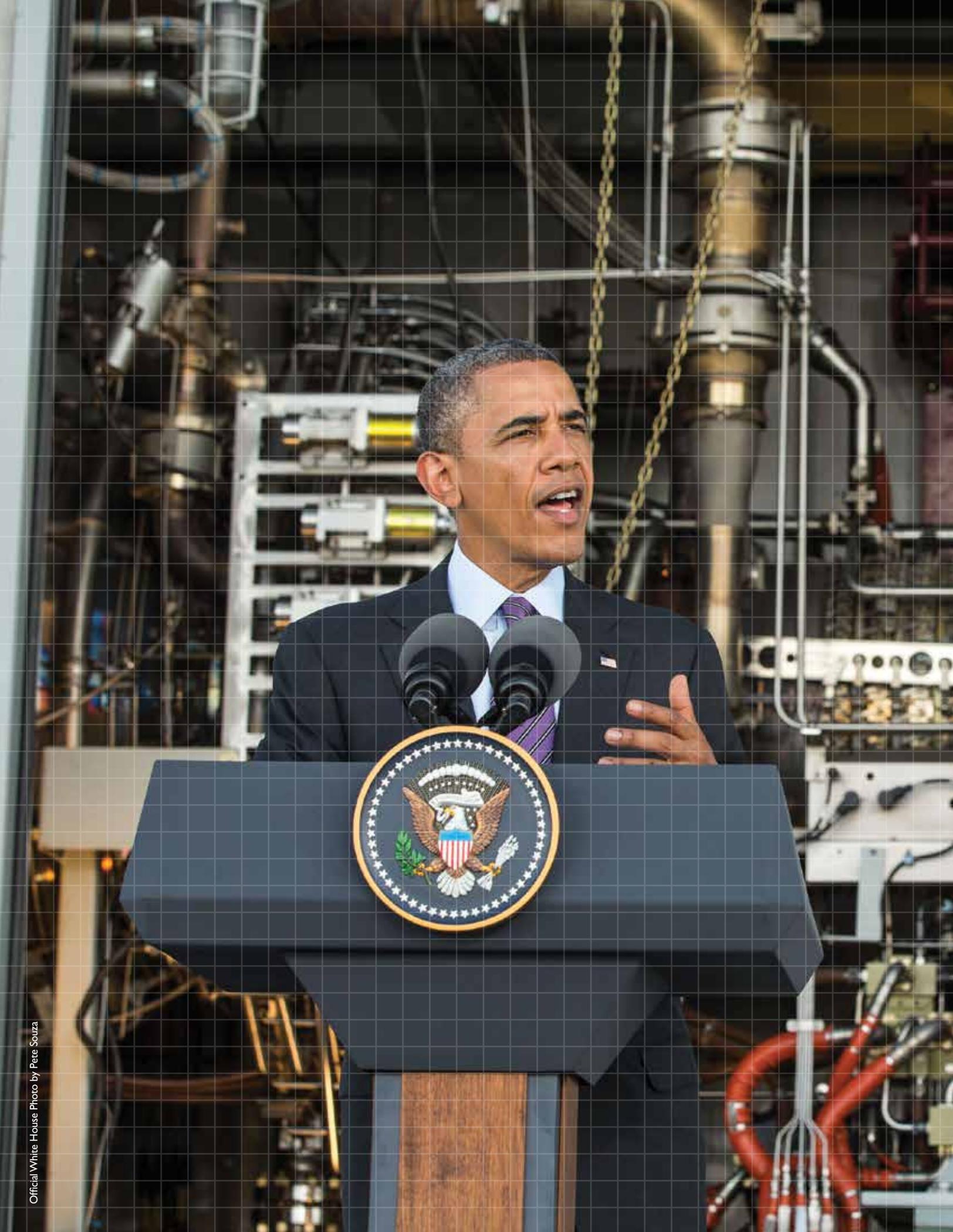
Private sector investors are seizing the opportunity that Africa's rapidly growing population and consumer market represents. But investments will only flow where there is a business-friendly investment climate, which seeks to limit the uncertainty and risk involved in any long-term investment.

African leaders recognize the critical role of the private sector in meeting Africa's energy needs and have shown a serious commitment to making the tough reforms needed to

attract that investment, and to ensure that investment flows continue to rise. The response from the private sector, both from the U.S. and Africa, has been overwhelming. As a result, *Power Africa* has helped facilitate the financial close of private sector transactions which expect to produce nearly 2,800 MW of new generation capacity.

This private sector-led model for engaging countries is yielding results around the world. As President Obama said in Cape Town, "we are moving beyond the simple provision of foreign aid, to a new model of partnership between the United States and Africa — a partnership of equals that focuses on your capacity to solve problems, and your capacity to grow." Through this partnership, we will continue to make investments in development that lift families, communities and nations into prosperity and opportunity, and help Africans reach their full potential.

Andrew M. Herscowitz
United States Coordinator
for *Power Africa*



EXECUTIVE SUMMARY



Today I am proud to announce...*Power Africa* — a new initiative that will double access to power in sub-Saharan Africa. We'll reach more households not just in cities, but in villages and on farms... We'll expand access for those who live currently off the power grid.



President Barack Obama, June 30, 2013 at the University of Cape Town

African leaders are articulating their own vision to dramatically increase access to power on the continent. *Power Africa* is supporting this African-driven vision in practical ways aimed at delivering results. *Power Africa's* approach focuses on partnership, driven by the private sector and supported by host country governments and multilateral and bilateral donors.

Large- and small-scale solutions for bringing cleaner, more efficient electricity generation capacity to sub-Saharan Africa are all grounded in a new model of development that drives *Power Africa*. The core of this model is based on effective partnerships that link public and private sector goals and resources, and connect investors and entrepreneurs to business opportunities in Africa. Structured not from the top down, but laterally, with U.S. agencies, African governments, private sector actors, and other stakeholders serving as partners in the enterprise — *Power Africa* is delivering results.

Power Africa's approach considers three related but distinct challenges to bringing that vision to life. Power must be **available**, meaning sufficient megawatts must be generated to meet people's needs. It must be **accessible**, so that even those communities that cannot be connected to national grids can still access electricity. And it must meet basic **quality** considerations, meaning natural resources and megawatts generated are efficiently managed to ensure optimal use.

POWER AFRICA DELIVERING RESULTS

- Transactions brought to financial close will generate 2,792 MW
- 25% of total goal reached in first year
- Over 5,000 MW in process
- Nearly 3:1 leveraging of funds — \$7 billion USG investment to more than \$18 billion private sector financing
- First year results represent projects with a potential to power more than 5 million connections to African homes, businesses, schools, and clinics

In just one year, *Power Africa* has made remarkable progress toward its ambitious goal of adding more than 10,000 megawatts (MW) of cleaner, more efficient energy generation capacity in sub-Saharan Africa. This increased capacity will make it possible to provide electricity access to 20 million new households and commercial entities in sub-Saharan Africa with on-grid, small-scale, and off-grid solutions.

As of June 2014, *Power Africa* had helped facilitate the financial close of transactions which expect to produce nearly 2,800 MW of new generation capacity — more than 25% percent of the 10,000 MW goal. This has the potential to provide power for more than 5 million African homes, service providers, and businesses. In addition, projects expected to generate more than 5,000 additional MW are currently being considered, which would bring the total MW generated to more than 7,800. This rapid progress has been possible because of an unprecedented level of cooperation among private investors, African governments, twelve U.S. Government agencies, and multilateral and bilateral donors.

Investors have committed to supporting *Power Africa* because African governments have themselves committed to making sweeping reforms in the power sector. Governments are transitioning from publicly owned and operated generation, transmission, and distribution facilities to a sector more inviting to private sector participation.

This transition has, in turn, unlocked financing from private investors and development entities, allowing for the construction of new generation facilities using cleaner, renewable energy sources and upgrades to distribution and transmission infrastructure.

The continent has also benefited from increased momentum toward cross-border energy trade and power pools as both public and private sector stakeholders recognize opportunities to maximize the impact of regional power solutions that efficiently deploy available natural, technical, and human resources to regional population centers.

In addition, the private sector has invested in the development and deployment of innovative technologies that will bring electricity to millions of rural Africans who cannot access grid-based power. Bringing electricity to populations not served by the power grid is the motivation behind a *Power Africa* sub-initiative called *Beyond the Grid*. Off-grid solutions can meet the needs of small-hold farmers and their communities, which make up 60% of Africans and account for 70% of Africa's poverty. These solutions can help ease the burden of energy poverty on the people who bear it most. *Beyond the Grid* and all *Power Africa* projects seek to address the disparities in terms of the social and economic benefits of increased energy access for women and men.

There is no question, however, that both men and women will benefit from the economic progress that greater access to energy will bring. By improving educational and commercial opportunities — especially for informal businesses — energy access will allow people to make great strides in overcoming the extreme poverty still endemic in regions of sub-Saharan Africa.

This progress can have significant commercial and national security ramifications for the United States as well. *Power Africa*, through its partnership with the private sector, will provide opportunities for American companies to reach new markets. And by its emphasis on cleaner energy sources, *Power Africa* can bring to scale technologies which hold promise for reducing the dependence on fossil fuels. Additionally, as the nations of sub-Saharan Africa enjoy greater prosperity, they will also enjoy enhanced social and political stability, making for a more peaceful world.

In his 2013 State of the Union Address, President Obama described the motivation behind the *Power Africa* initiative succinctly:



We also know that progress in the most impoverished parts of our world enriches us all — not only because it creates new markets and more stable order in certain regions of the world, but also because it's the right thing to do...





CONTENTS

9 ILLUMINATING THE ISSUE

- 11 Electricity Powers Prosperity
- 12 Rich in Potential
- 15 Removing Roadblocks to Progress

17 POWER AFRICA APPROACH

- 17 Advancing a New Model
- 21 Building Partnerships
- 23 Twelve Agencies, Two Continents, One Mission
- 25 Getting to the Goal
- 27 Reform Spurs Investment

30 AVAILABILITY

- 31 The Quest for Greater Power
- 31 The New Model in Action
- 32 Catalytic Transactions
- 35 Leveraging U.S. Government Tools for Investment
- 36 Commitments by U.S. Government Agencies

39 ACCESS

- 39 Increasing Energy Access via Small-scale Solutions
- 39 Reaching the “Unreachable”
- 40 Moving *Beyond the Grid*
- 43 Building On the Transaction Model

47 QUALITY

- 47 Policy Drives Investment
- 50 Inviting Private Sector Participation
- 52 Leadership from the Top; Capacity Throughout
- 53 *Power Africa* in Action; Delivering Results

61 LOOKING FORWARD

- 61 Increasing Partnership
- 62 The Path Forward
- 63 A Brighter Future

65 ANNEXES

- 65 U.S. Government Support Capabilities
- 70 U.S. Government Technical Assistance
- 78 Policy, Regulatory and Governance Objectives

83 REFERENCES





ILLUMINATING THE ISSUE

A life without electricity is a life with limited opportunities. Entrepreneurs cannot count on consistent power to operate equipment or access tools for communications and market development. Educational opportunities are restricted by daylight. The dark of night compromises both mobility and public safety. And modern health care is greatly limited.

In 2014, there are 1.2 billion people on earth who live that reality, and half of them live in sub-Saharan Africa. Throughout the region, access rates average approximately 30%.¹ Among the 20 countries with the highest deficits in access to electricity, twelve are in sub-Saharan Africa.² Eight of those twelve report access rates below 20%.³

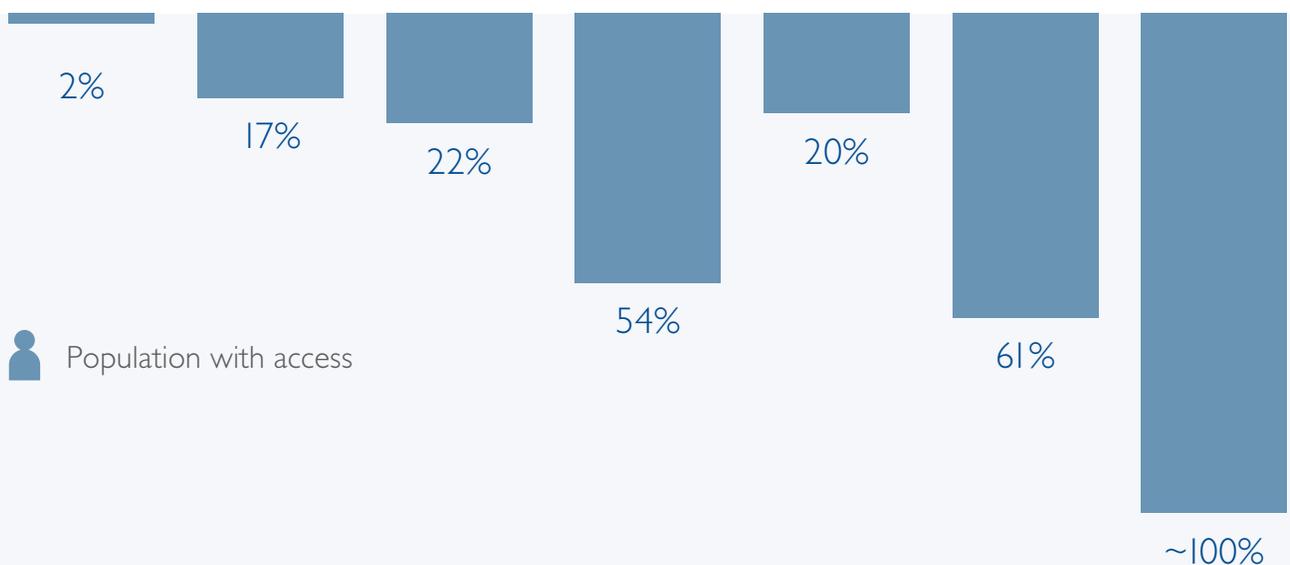
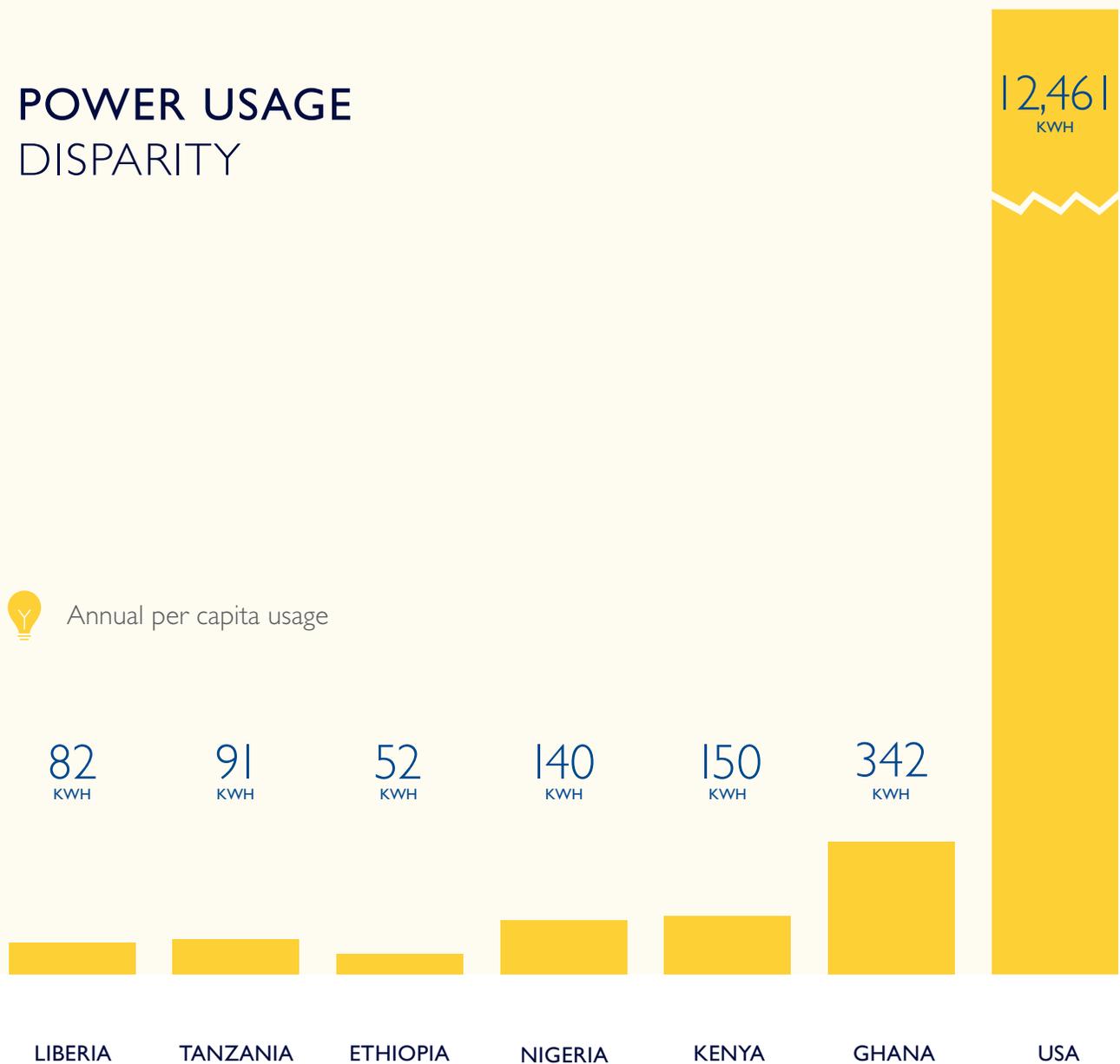
To put that in perspective, **over the course of a year a refrigerator in the U.S. uses six times more electricity than an average citizen of Tanzania.**⁴ It takes an average Ethiopian two years to consume the amount of electricity an average American uses in just three days.⁵

According to the International Energy Agency, 40% of the population (about 240 million people) who lack access to electricity in sub-Saharan Africa live in the six *Power Africa* focus countries: **Ethiopia, Ghana, Kenya, Liberia, Nigeria, and Tanzania.**⁶

POWER USAGE DISPARITY



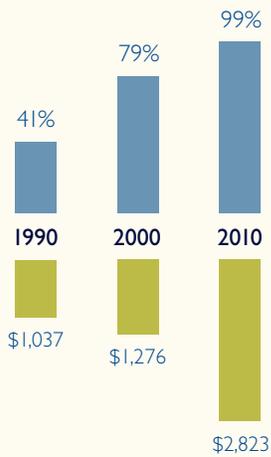
Annual per capita usage



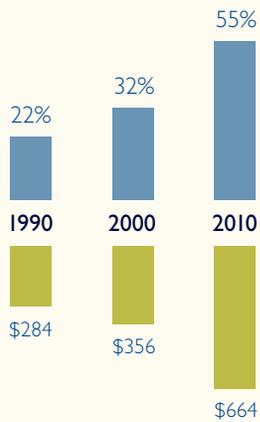
Population with access

ELECTRICITY POWERS PROSPERITY

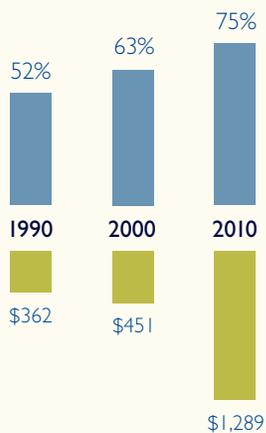
MOROCCO



BANGLADESH



SOUTHERN ASIA



 Population with access
 GDP per capita (current \$U.S.)

Since 2001, **sub-Saharan Africa has been home to six of the top ten fastest growing economies in the world.**⁷ The International Monetary Fund projects that seven of the ten fastest growing economies in the 2011 to 2015 timeframe will be in sub-Saharan Africa.⁸ The middle class is rising. Child mortality rates are declining, while life-expectancy is increasing.⁹ Despite these advances, challenges to this rapid pace of growth and development remain, and access to reliable power remains one of the most significant impediments to growth.

Addressing this gap is central to advancing the goal of driving broad-based economic growth in sub-Saharan Africa and helping to eradicate extreme poverty, as articulated in the President's U.S. Strategy Toward sub-Saharan Africa. Data from the Energy Information Administration (EIA) shows a correlation between increased electrification and greater national prosperity, as shown in the accompanying chart.¹⁰

Electrification boosts GDP because businesses create jobs in factories, offices, and shops. Reliable electricity further boosts GDP because manufacturers do not have to rely on expensive diesel back-up generators that significantly increase production costs.

Electricity gives students access to effective learning environments. It makes possible safe storage of vaccines and medicines. It drives advances in agriculture, animal husbandry, and agribusiness. It leads to dramatic increases in public safety and health. All these advances create opportunities for individuals and communities, and support an environment ripe for economic growth.

Where electrification lags, people and economies fail to thrive, and poverty remains endemic. This energy poverty is felt differently by different segments of a country's population — women and rural populations in particular are acutely impacted by limited access to power. In many parts of rural sub-Saharan Africa, electrification rates are well below five percent. In these same areas, it is estimated that women account for 70% of the agricultural labor force.¹¹ Increasing access to electricity — and the subsequent economic opportunities it brings — can result in tremendous benefits for women and the communities in which they live.

Even in regions where electricity generation exists, service remains unreliable or unavailable due to system inefficiencies and outdated infrastructure that impede access for local communities.



A light where currently there is darkness; the energy needed to lift people out of poverty — that's what opportunity looks like.¹²



President Barack Obama

Despite tremendous challenges, and even with 600 million people currently living without electricity, solutions to Africa's energy needs are within reach. Sub-Saharan Africa possesses vast energy resources that, if tapped responsibly and distributed efficiently and broadly, can transform the lives of hundreds of millions of people.

Transforming the continent's energy trajectory through partnerships among the private sector, host country governments, and donors is what *Power Africa* is all about.

RICH IN POTENTIAL

It is estimated that there is enough solar and hydro power potential available in sub-Saharan Africa to provide for a major portion of the region's unmet energy needs.¹³ East Africa's Rift Valley is estimated to have 15,000 MW of geothermal energy resources, enough to potentially power 30 million African households.^{14, 15} Off the coast of Tanzania and Mozambique, discoveries of natural gas could total more than 100 trillion cubic feet, enough to power 100 million U.S. households for 15 years.^{16, 17} And the winds that blow through Kenya's Lake Turkana plains offer clean, sustainable energy that can power hundreds of thousands of homes.



mega · watt

noun \ˈmegə-ˌwät\

a unit of electrical power
equal to one million watts

What does that mean for *Powering Africa*?

It is difficult to define how many homes can be powered by a single megawatt given global variations in consumption rates and multiple other factors. *Power Africa's* best estimate is that 1MW of generation capacity can supply electricity to 2,000 African homes. This calculation includes assumptions about access rate, average family size, technical losses, capacity factor, load factor and modest growth in consumption per capita over time.

President Obama launched *Power Africa* with the aim of doubling access to electricity in sub-Saharan Africa by realizing the full potential of these resources. To achieve this goal, U.S. Government agencies have pledged \$7 billion in investment, financial guarantees and technical assistance in order to exponentially leverage private sector investment in power. *Power Africa* prioritized engagement in six focus countries in its initial phase — Ethiopia, Ghana, Kenya, Liberia, Nigeria, and Tanzania — to add **10,000 megawatts and 20 million new connections**. These initial focus countries met a number of critical criteria, including a commitment to tough policy reforms in their energy sectors to improve their business climates, and a hard push to attract and leverage private sector resources to dramatically increase the continent's energy supply. *Power Africa* will also partner with Uganda and Mozambique on responsible oil and gas resources management through the Energy Governance and Capacity Initiative.

Power Africa is also supporting institutional and policy reforms needed to facilitate regional efforts to increase access to cleaner energy including support for East and West African Power Pools and regional energy trading.

In addition to supporting grid connected energy generation transactions, *Power Africa* is also working with partners to help bring electricity to those people who are not expected to be connected to the grid in the near and medium term, leveraging off-grid and small-scale technologies. This balanced approach, and the integration of new technology and private sector partnership for off-grid solutions, is critical to the sustainable, long-term success of *Power Africa*. Building on *Power Africa*'s support for a number of distinct small-scale energy projects across African markets, the initiative will advance the policy and regulatory frameworks necessary to overcome recurring constraints in the small-scale energy space.

To achieve the goal of doubling access to electricity, *Power Africa* and its partners are learning from efforts in the six focus countries while making various tools and resources available to countries across sub-Saharan Africa. For example, of the \$7 billion pledged, the U.S. Export-Import Bank (EX-IM) committed \$5 billion and the Overseas Private Investment Corporation (OPIC) committed \$1.5 billion in financing support for energy projects throughout sub-Saharan Africa — not just in the focus countries. *Power Africa* is also supporting institutional and policy reforms needed to facilitate regional efforts to increase access to cleaner energy including support for East and West African Power Pools and regional energy trading.

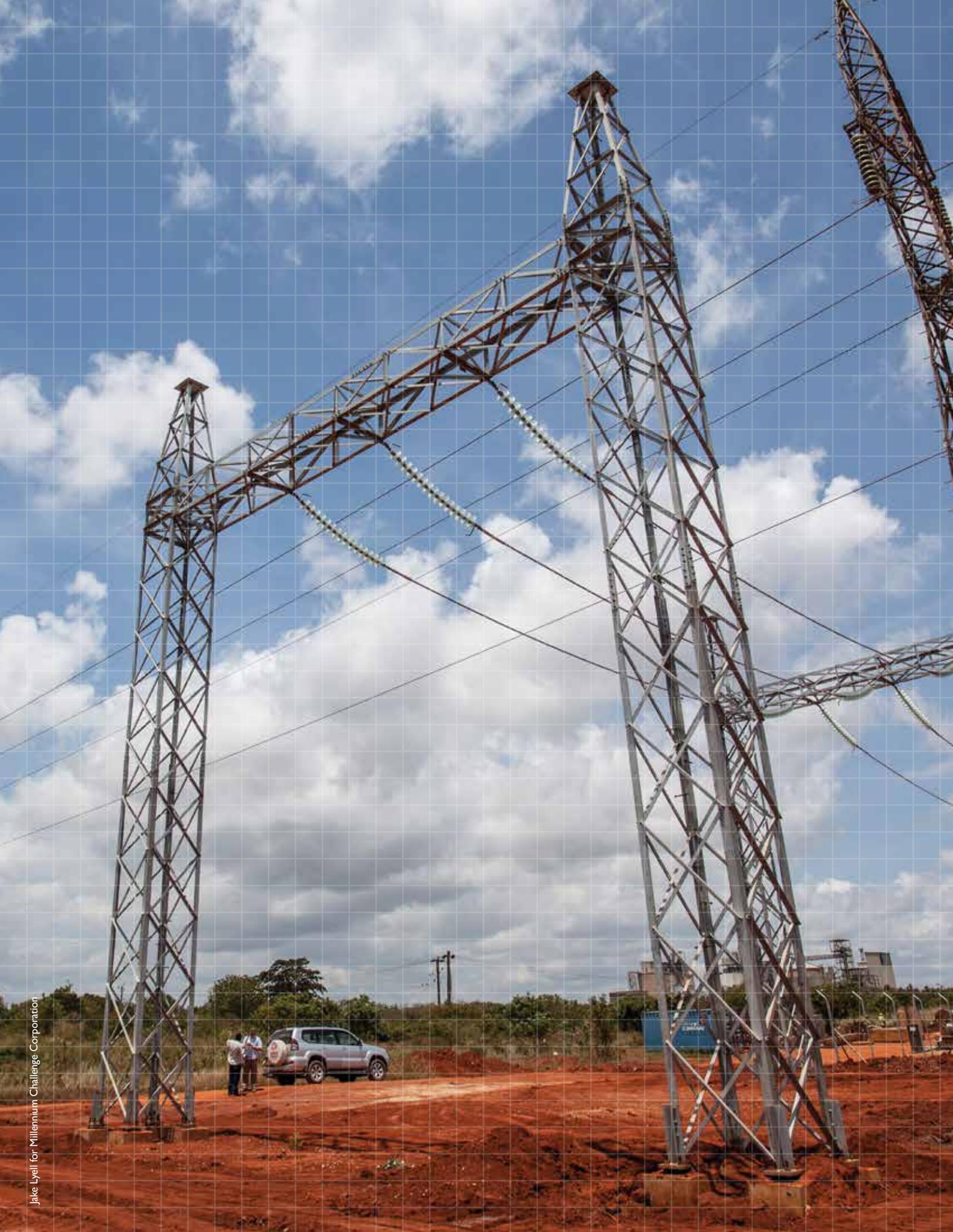
REMOVING ROADBLOCKS TO PROGRESS

Private sector investment is essential if sub-Saharan Africa is to achieve universal access by 2030. According to the International Energy Agency, \$300 billion in private investment is needed to reach that goal.¹⁸ However, poorly designed regulations, corruption, governance challenges, political uncertainties, and a lack of technical and managerial expertise have all held back investment and progress in energy generation and distribution in sub-Saharan Africa. In particular, the legal, regulatory, and political roadblocks common to state-run enterprises have greatly hindered investment by the private sector.

Greater private sector participation is critical not only to investment, but to strengthening technical and managerial expertise in key power sector institutions. Absent the reforms that support a transition from inefficient state-run enterprises to private ownership in the energy sector, the private investment and knowledge transfer needed to address Africa's electricity shortages will continue to be hampered.

There has been real progress toward reform, as highlighted by Nigeria's historic transfer of ownership of power companies to the private sector, and significant impetus toward privatization and regulatory progress throughout sub-Saharan Africa. Ethiopia is engaged in negotiations that will welcome its first privately owned power producer, opening its doors to further private sector investment. The Government of Ghana has also committed to significant reforms to attract private investment in the power sector as it moves towards signature of a \$498 million Millennium Challenge Corporation Compact. Additional areas of *Power Africa* policy engagement include the strengthening of energy sector operators and independent regulators, the development of feed-in tariffs for renewable energy sources, and improved energy sector planning.

Governments in sub-Saharan Africa have made difficult decisions advancing politically unpopular, but necessary reforms, such as cost-reflective energy tariffs. Implementing public sector reforms is a long and challenging process, no less so in Africa than in Europe or North America, and substantial support is needed to see these reforms through to conclusion. With this in mind, *Power Africa* seeks to strengthen the institutional and human capacity needed to attract investment on a long-term, sustainable basis, and to effectively manage a growing power sector.





POWER AFRICA APPROACH ADVANCING A NEW MODEL

The commitment to expand energy access to the 600 million people who currently lack power in sub-Saharan Africa requires a new model grounded in the following precepts:

- Power sector growth relies on effective partnerships that link public and private sector goals and resources, connecting investors and entrepreneurs to business opportunities in Africa;
- Although goals and objectives are long-term, we must deliver near-term, rapid results and impacts to catalyze broader power sector growth; and
- Growth within the power sector is best achieved when the optimal mix of generation sources are exploited, while environmental factors key to ensuring the sustainability of the sector are considered.

With its new model of development — driven through partnership with private sector companies, African governments, and multilateral and bilateral donors — *Power Africa* is delivering results by:

- Advancing catalytic transactions led by private investors that have broad impact in the power sector beyond the immediate project, including expanding the adoption of cleaner energy generation sources;

TRANSACTION PROCESS



TRANSACTION LIFE CYCLE SUPPORT

- ✓ Advocacy and Support for Legal, Regulatory, and Institutional Reforms with Ministries
- ✓ Advocacy for Regulators, Utilities, and Rural Electrification Agencies
- ✓ Technical Training Exchanges

POWER AFRICA

3



PROJECT STRUCTURING AND NEGOTIATION

	\$2MM — \$25MM+
	Equity Investors including PE Funds, Development Finance Institution Loans
	Moderate Risk
	Transaction Advisory, Loan Guarantees, Working Capital Loans for U.S. Exporters, Direct Loans, Risk Mitigation Insurance, Assistance in Negotiation of Power Purchase Agreements, Targeted Advocacy, Support for Legal, Regulatory, and Institutional Reforms
	USAID, OPIC, EX-IM, MCC, USTDA, DOS, DOE, DOC, Treasury

4



CONSTRUCTION

	\$10MM — \$1BB+
	Equity Investors including PE Funds, Bank Loans (Private / Multilateral)
	Lower Risk
	Loan Guarantees, Risk Mitigation Insurance, Working Capital Loans for U.S. Exporters, Medium Term and Long Term Direct Loans
	OPIC, EX-IM, USAID

CHALLENGE
Provide long-term funding

- Budgeting and Financial Accountability
- Reverse Trade Missions and Trainings
- Trade Promotion Programs

- Supporting policy reforms and improved governance in the power sector, using investor interest and catalytic transactions to identify and prioritize strategic reforms and timeframes to be realized;
- Collaborating closely with multilateral partners, including the World Bank and African Development Bank, to advance critical reforms in the power sector by coordinating and building on policy advice, technical assistance, and policy-based lending activities;
- Mobilizing finance from private investors, donors, and host country governments more effectively to bring projects to fruition across sub-Saharan Africa;
- Supporting the commercialization and deployment of new, renewable, and sustainable technologies, especially for small-scale and off-grid solutions; and
- Strengthening regional power pools through support to regional energy projects to drive the trade of electricity among countries.

It is a strategic approach to diplomacy and development that will advance progress in Africa, even as it strengthens ties between American and African companies in markets that will expand as access to electricity grows.

This is the *Power Africa* model. It looks to build upon the foundation of previous reforms and progress in the power sector and accelerate advances by facilitating partnerships among key stakeholders and addressing critical bottlenecks that continue to hold back investment. It empowers and provides African leaders with tools and resources to execute their vision for the power sector and to build regional power markets to address their energy needs. It is a strategic approach to diplomacy and development that will advance progress in Africa, even as it strengthens ties between American and African companies in markets that will expand as access to electricity grows.

BUILDING PARTNERSHIPS



...by elevating the issue of energy poverty and launching a coordinated strategic approach to handling it, the U.S. Government has galvanized the world to see the African power sector as a viable investment opportunity; and that is why we partnered with *Power Africa*.



Tony Elumelu, CON, Chairman Heirs Holdings

The foundation of *Power Africa* is partnership. ***Power Africa* has developed partnerships with over 39 private sector companies** and organizations, as well as several donors who are active in the power sector. Of these 39 partners, 14 are African. These investors and donors are engaged in activities that align with the goals of *Power Africa* and those of host country governments working with the initiative. Along with the resources and tools of the U.S. Government, *Power Africa* has also gained the support, resources, and know-how of investors and donors, expanding the potential impact of its efforts significantly.

Power Africa is partnering with a range of private sector companies and organizations, including fourteen power sector developers, thirteen investment funds, advisory services and banks, and four business associations. Each of these organizations has made specific commitments to *Power Africa* to invest a certain amount of funding in power projects, or has committed to add a certain amount of generation capacity to the grid, or to make that capacity available through off-grid and small-scale solutions. As of June 30, 2014 **private sector partners have pledged to develop over 14,000 MW of critical generation**

projects in the *Power Africa* focus countries, resulting in an estimated \$18 billion in investment in these countries' power sectors. Included in this number is \$1 billion in pledged support for *Beyond the Grid*, *Power Africa*'s signature effort on small-scale and off-grid solutions. These commitments will be significant in helping *Power Africa* meet and exceed its objective to provide access to 20 million new connections for households and commercial entities.

The World Bank Group, the African Development Bank (AfDB), and the United Nations, among others,



The World Bank's interventions will include investment loans, reforms, advisory services, and guarantees.

are playing critical roles in forming a viable power sector in sub-Saharan Africa. Other international donors, including the European Union, the United Kingdom's Department for International Development, the Danish International Development Agency, the Norwegian Agency for Development Cooperation, the Japan International Cooperation Agency, the Swedish International Development Cooperation Agency, and the Korea International Cooperation Agency are valued partners as well, and are actively engaged in the power sector in Africa. *Power Africa* works in tandem with these organizations to align resources and coordinate efforts for focused results.

Power Africa and the World Bank Group are collaborating closely to address the demand for better and more reliable power, and to enhance the capacity of African governments to manage their power sectors and attract investment. As part of this collaboration, joint country work plans have been developed to advance policy reforms and power sector investments, and to work with partner government agencies to attract private investment in the power sector. In addition, the two partners will collaborate on scaling up the use of off-grid and small-scale technologies, supporting geothermal power development, and strengthening regional power trade.

The World Bank Group expects to commit an additional \$3.5 billion in support of energy projects in the initial six *Power Africa* focus countries, complementing their existing commitments to all of sub-Saharan Africa's energy sector currently totaling \$13.5 billion.

Power Africa formed a strong partnership with the African Development Bank. In July 2013, the AfDB committed to allocating \$3 billion over five years to energy sector operations in the *Power Africa* countries, which will significantly leverage other public and private investments in the energy sector. Under this collaboration, the AfDB

is focusing on energy production, transmission, and distribution infrastructure, as well as cross-border power pools, and policy and regulatory reforms. The AfDB's interventions emphasize reforms for national power utilities and will also include investment loans, reforms, advisory services, and guarantees. The AfDB has, over the past five years, committed more than \$1.6 billion in energy infrastructure funding to the six initial focus countries as part of its existing \$12 billion commitment to Africa's energy sector.

Power Africa also closely aligns with the United Nations' sponsored Sustainability Energy for All (SE4ALL) initiative, and through its cleaner energy and off-grid and small-scale energy efforts, supports the goals of providing universal access and doubling the share of renewable energy in the energy mix.

TWELVE AGENCIES. TWO CONTINENTS. ONE MISSION

Power Africa is the first U.S. Presidential initiative being led from the field.

Power Africa represents a new approach to solving the complex challenge of bringing widespread electrification to the continent by combining the efforts of twelve U.S. Government agencies, partnering with the private sector, other donors, and African governments themselves. Facilitating that partnership is the presence of the *Power Africa* Coordinator, based on the African continent, and interagency teams based at the U.S. Embassy in each focus country. *Power Africa* is the first U.S. Presidential initiative being led from the field. This presence in sub-Saharan Africa allows for greater real-time engagement with companies doing business on the continent.

The U.S. agencies providing development assistance, diplomatic engagement, funding, and technical expertise include:

- The Export-Import Bank of the United States (Ex-Im Bank)
- The Millennium Challenge Corporation (MCC)
- The Overseas Private Investment Corporation (OPIC)
- The U.S. Agency for International Development (USAID)
- The U.S. Trade and Development Agency (USTDA)
- The U.S. African Development Foundation (USADF)
- The U.S. Army Corps of Engineers (USACE)
- The U.S. Department of Agriculture (USDA)
- The U.S. Department of Commerce
- The U.S. Department of Energy (DOE)
- The U.S. Department of State
- The U.S. Department of Treasury

By working collectively, each agency reinforces the work of its partners. For example, the diplomatic engagement of the Department of State and the technical expertise of the Department of Energy and USAID often support the complex project preparation and financing efforts of USTDA, OPIC, and the Ex-Im Bank.

The innovative model represented by *Power Africa* has been welcomed by its private sector partners.



The solutions for Africa's power sector vary from country to country and region to region requiring the tools and resources of an array of agencies. By corralling and focusing these agencies on a single mission through *Power Africa*, solutions for Africa's power sector are now within reach.



Sean Long, CEO, Denham-backed Endeavor Energy, a *Power Africa* partner

Power Africa works with its private sector partners to identify the most significant challenges they face in making investments in the power sector. In response, **U.S. Government agencies work together to identify the most appropriate tools and resources to address these challenges.** *Power Africa* engagement may range from working with African government partners on policy and regulatory best practices and capacity building, to engaging with private partners on project preparation, long-term financing, insurance, guarantees, and credit enhancements. These engagements are making the business and investment environments more attractive to power sector investors.

The U.S. Embassy teams, composed of members of various U.S. Government agencies, directly engage with the host government, private sector partners, and other donors to ensure that *Power Africa* can identify and remove obstacles to energy transactions. Key players on these teams are the *Power Africa* Transaction Advisors, professionals with experience in both the energy and investment sectors. These Advisors help identify roadblocks and galvanize the needed support of the appropriate U.S. Government agency.

GETTING TO THE GOAL

As of June 2014, *Power Africa* has helped facilitate the financial close of private sector transactions which expect to produce **nearly 2,800 MW** of new generation capacity — **more than 25%** of the **initial goal of 10,000 MW** in the initial six focus countries. In Kenya alone, these projects range from the **development of a 10 MW** biomass project to the privately owned **310 MW Lake Turkana Wind Project** — the largest single investment in Kenyan history. In addition to the closed transactions; projects expected to generate more than **5,000 additional MWs** are actively being considered, which would bring the total of MW generated to **more than 7,800**. New projects are continually introduced and evaluated, and facilitated by transaction advisors.



I've been involved with *Power Africa* from its early days and I've witnessed how the various agencies have come together to work with the private sector. The *Power Africa* team and the United States Government in general have played an active and important role helping Symbion deal with some of the challenges that we have faced in our investments. Later this year we will announce several new investments that have been driven by our commitment to the *Power Africa* initiative.



Paul Hinks, CEO, Symbion Power



Carole Douglas for USAID East Africa



It has been critical to our success that *Power Africa* provides access to several arms of the American Government, streamlining the process for developers on the ground so that we do not have to approach multiple agencies independently, but have *Power Africa* at the center directing our advocacy across agencies.



Richard Herbert, CEO, *Power Africa* partner Aeolus Kenya

REFORM SPURS INVESTMENT

These rapid advances would not be possible without the commitments of partner countries to regulatory, legal, and tariff reform, as well as to building the capacity of power sector institutions, all of which help decrease risk and uncertainty for private investors. *Power Africa* and other donors are working closely with Liberia and Kenya in their efforts to adopt new frameworks for energy legislation. In Tanzania, *Power Africa* is supporting the “Big Results Now!” program, in which government

ministries are charged with driving progress on specific power projects. Ghana is employing technical and organizational assistance to improve the viability of its utilities.

This proven commitment to reform has been vital to building the confidence and cooperation of the private sector, reflected in the growing interest *Power Africa* has seen from investors willing to make commitments in support of the initiative’s stated goals. Illustrating

this confidence, Heirs Holdings has committed \$2.5 billion of investment and financing for energy projects over the next five years; Aldwych International is catalyzing \$1.1 billion to develop wind power in Kenya and Tanzania; and General Electric is committed to bringing 5,000 MW on line by providing technology, expertise, and capital in Tanzania and Ghana. These investments would not have been possible without the reforms needed to create an environment conducive to private investment.

PRIVATE SECTOR PARTNERS

Aelous Kenya Ltd.

AFCORP Investments

Africa Finance Corporation

Africa Infrastructure

Investment Managers

Aldwych International

American Capital Energy
& Infrastructure

APR Energy

Black Rhino Group

Corporate Council on Africa

Denham Capital Management

dVentus Technologies

EA Power

EGG Energy

General Electric

Geothermal Energy Association

GG Energy Holdings

Goldman Sachs

Harith

Hecate Energy

Heirs Holdings

Husk Power Systems

IAP Worldwide Services

Industry Capital

Initiative for Global Development

KMR Infrastructure

National Rural Electric
Cooperative Association

Nedbank Capital

NextGen Solar

Nigeria Solar Capital Partners

Orchid Business Group

Ormat Technologies

Standard Bank Group

Standard Chartered

Sun Edison

Symbion Power

The Abraaj Group

U.S. Energy Association

United Bank for Africa

Viability Africa

USG ENERGY SECTOR WORK IN SUB-SAHARAN AFRICA

ANGOLA 1  DOE 	MALAWI 5  USTDA MCC  	SIERRA LEONE 9  DOS MCC  
BENIN 2  USAID MCC 	NAMIBIA 6  USAID OPIC   	SOUTH AFRICA 10  USTDA OPIC DOE DOC      
DRC 3  USAID 	RWANDA 7  USAID OPIC  	UGANDA 11  USAID OPIC DOS   
LESOTHO 4  USAID 	SENEGAL 8  USAID OPIC  	

LEGEND

 Biomass	 Solar	 Oil	 Hydro	 Wind	 Geothermal	 Natural Gas	 Transactions	 Technical Assistance
---	---	---	---	--	--	---	--	--

DOC
Department of Commerce

DOE
Department of Energy

DOS
State Department

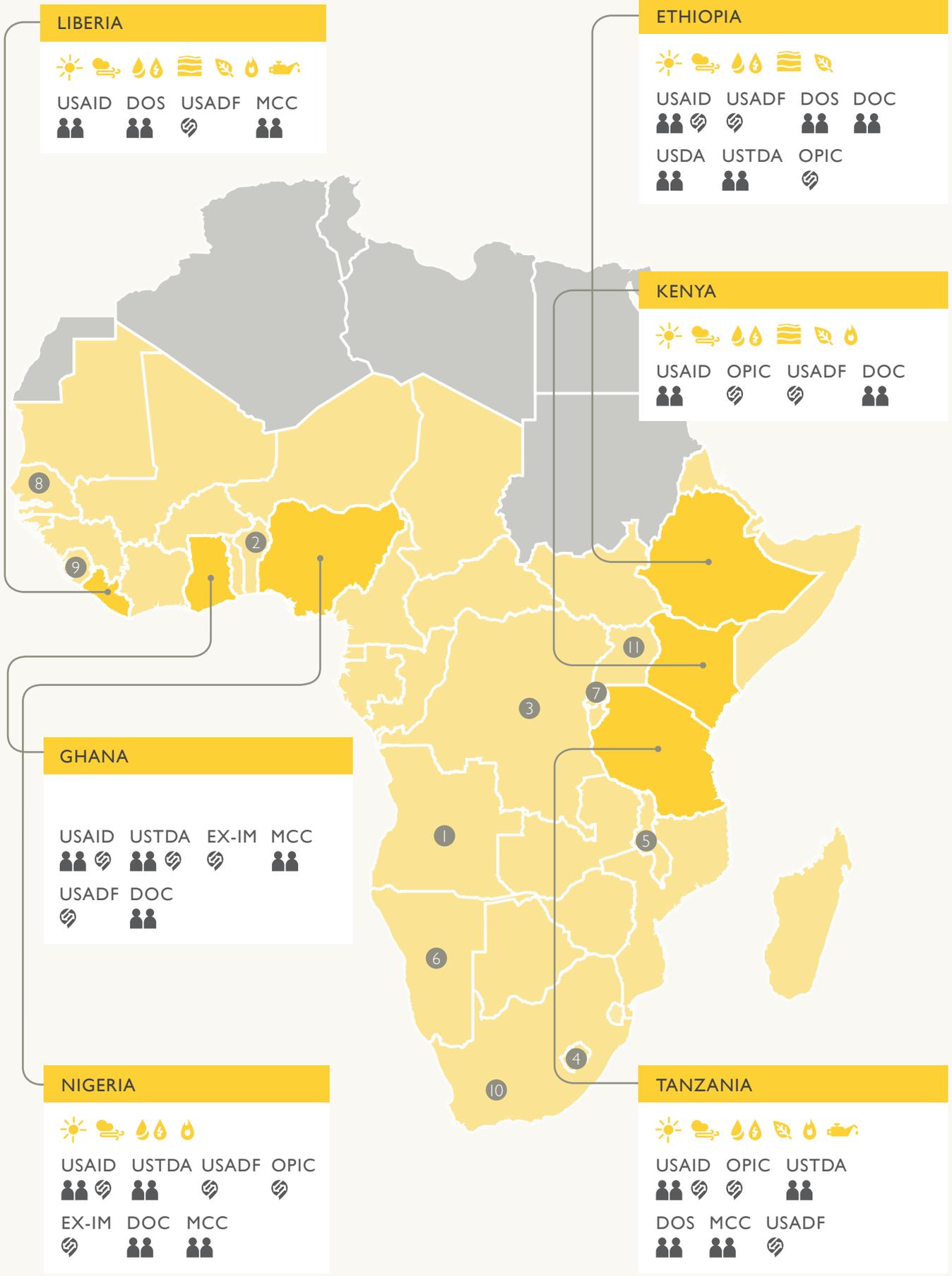
EX-IM
Export-Import Bank
of the United States

MCC
Millennium Challenge
Corporation

OPIC
Overseas Private
Investment Corporation

USADF
U.S. African
Development Foundation

USTDA
U.S. Trade and
Development Agency



LIBERIA

USAID DOS USADF MCC

ETHIOPIA

USAID USADF DOS DOC

 USDA USTDA OPIC

KENYA

USAID OPIC USADF DOC

GHANA

USAID USTDA EX-IM MCC

 USADF DOC

NIGERIA

USAID USTDA USADF OPIC

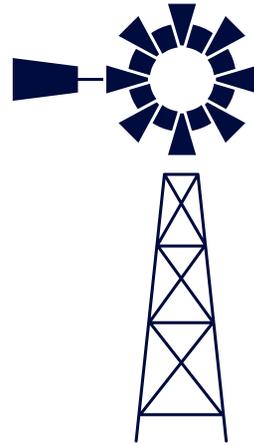
 EX-IM DOC MCC

TANZANIA

USAID OPIC USTDA

 DOS MCC USADF





AVAILABILITY THE QUEST FOR GREATER POWER

One U.S. utility, American Electric Power (AEP), has a generation capacity of 38,000 MW. It serves 5 million customers in eleven U.S. states. By contrast there are 6,000 MW available to serve the 179 million people in all of Nigeria, one of the largest energy producers in sub-Saharan Africa.¹⁹ This equates to roughly 35 times as many people sharing one-sixth of the available electricity capacity. Efforts to overcome this gap in power availability require a comprehensive strategy.

THE NEW MODEL IN ACTION

As outlined earlier, *Power Africa* is built on a new model of development and diplomacy, aimed at advancing catalytic transactions, supporting policy reforms and improved governance, and mobilizing financing to bring projects to fruition. When these three parts of the model work in tandem, the rapid progress that has characterized the first year of *Power Africa* becomes possible. The net result of this progress is not only more power generation capacity to serve more people, but also the catalytic impact that these transactions have in improving the regulatory and institutional environment, which in turn facilitates additional investments across diverse sources of power generation. Several *Power Africa* investors noted that the initiative's efforts to develop standardized and annotated Power Purchase Agreements reduces the opportunity for corruption, thereby making investment more attractive.

CATALYTIC TRANSACTIONS

Power Africa's private sector driven transaction-based approach is what sets it apart from previous efforts to boost generation capacity on the continent.

The initiative looks to accelerate projects toward financial close as roadblocks are identified and addressed through joint dialogue and action among the private sector, host country governments, and donors.

Power Africa's Transaction Advisors serve as a bridge between host governments and the private sector to help advance the financial close of a particular project. Depending on a project's or a country's particular needs, Transaction Advisors promote reforms essential to project completion, explain the nuances of the energy sector to potential investors in a particular country, and coordinate the flow of information among diverse stakeholders. They play a critical role in facilitating the dialogue between private sector companies advancing these projects and the government agencies and energy sector institutions critical to the completion and long-term economic viability of the projects.

Following are a few examples of how *Power Africa's* transaction-based approach is helping African governments take dramatic steps forward in growing the power sector to generate more megawatts.

Ethiopia: The Government of Ethiopia expressed interest in **establishing its first independent power producer (IPP) to tap into the country's geothermal potential**. The proposed Corbetti Geothermal project will increase the country's current generation capacity by about 50%. Establishing an IPP, however, is a financially and technically complex process. To support the Government of Ethiopia's commitment, *Power Africa* provided a Transaction Advisor who is working hand-in-hand with government officials through a long and intricate process of negotiation. With *Power Africa's* support, the Government of Ethiopia has also engaged the African Legal Support Facility, sponsored by the AfDB, to access international legal advisory services. As the first private sector investment in energy in Ethiopia, the Corbetti project paves the way for future investment while also providing a cleaner source of power. According to Michael Philipp, the Chairman of the Board of Reykjavik Geothermal and the project's developer:



Robert Sauters for USAID



The *Power Africa* transaction advisor is the linchpin working between Ethiopian Electric Power, the Ministry of Finance, the Government of Ethiopia's legal support, our lawyer, and our people at Corbetti Geothermal/Reykjavik Geothermal. I think we now have the right team in place to bring the Power Purchase Agreement and other documents to signing later this year so that we can begin drilling. The transaction advisor has brought experience and know-how to the Ethiopian team as they implement their first IPP, and his role has been absolutely critical.



Michael Philip, Chairman of the Board, Reykjavik Geothermal

Ghana: The Electricity Company of Ghana (ECG) is working with *Power Africa* Transaction Advisors to finalize a 340 MW thermal generation plant, Cenpower. These advisors are facilitating negotiations to determine the price of power purchased by ECG. **When finalized, this plant could provide enough power to serve nearly 700,000 homes.** The Government of Ghana is also working with *Power Africa* Advisors to produce and implement a Gas Action Plan. The plan is a road map to complete gas infrastructure — pipelines, a processing plant — and transport gas from Ghana's first domestic field, Jubilee, to power plants in western Ghana in an effort to stabilize the country's power generation capacity.

Kenya: *Power Africa* is working closely with the Government of Kenya to help optimize the potential of wind power generation. A *Power Africa* Transaction Advisor is working with the government, project financiers, and developers to close agreements for the funding and construction of these generation facilities. **Additionally, *Power Africa* is providing support to the utility companies to ensure that the grid can properly manage the intermittency of wind and solar generated power, and avoid grid stability issues that would adversely impact the financial viability of the projects.**

Power Africa, through lending by OPIC, is supporting the Lake Turkana Wind Power project in northern Kenya, the **single largest wind project in Africa.** This project is expected to generate over 310 MW of clean, renewable energy that will serve millions of Kenyans.

Nigeria: Nigeria's Bulk Trader and the Electricity Regulator are finalizing legal commercial documents on independent power production, including wind and solar projects. *Power Africa* Transaction Advisors are supporting efforts to develop Power Purchase Agreements, Gas Supply Agreements, and key Project Agreements. **They also worked with the Transmission Company of Nigeria (TCN) to develop a financial blueprint and investor package to advance transmission planning and needed investment.** The blueprint marks the first time in the history of TCN that a detailed view of the existing and projected financial outlook for the company was made available.

Tanzania: *Power Africa* Transaction Advisors are not only facilitating large scale projects. In Tanzania, an **Advisor works solely on advancing rural electrification,** which will be accomplished through off-grid and small-scale solutions employing technologies focused on renewables.

In both East and West Africa, Transaction Advisors will focus on regional solutions, cross-border trade, and the optimization of power pools to maximize abundant natural resources.



At the US-Africa Energy Ministerial meeting, U.S. Energy Secretary Moniz highlighted our Kigoma solar project as an example of a successful U.S.-Tanzania partnership under *Power Africa*. Following this meeting, Tanzania's Minister of Energy, Professor Sospeter Muhongo visited the U.S. where he met with USAID and OPIC to discuss open issues needing a decision by Tanzanian authorities regarding the Kigoma project.

Following these meetings Minister Muhongo was confident that the Kigoma solar project had significant tangible benefits for the region. As a result, he worked diligently to deliver on all that he promised — the Power Purchase Agreement Amendment has been approved, resolving the only remaining issues concerning the transmission line and location of the billing meter.



Mayank Bhargava, Managing Director, NextGen Solar USA

LEVERAGING U.S. GOVERNMENT TOOLS FOR INVESTMENT

Securing the financial resources needed to improve the availability of electricity is a complex process and one that is necessary given the limitations of public finance. Through its partners, *Power Africa* is unlocking financing resources and helping African governments negotiate the agreements and guarantees needed to receive that financing.



Rudy Charrif for USAID

COMMITMENTS BY U.S. GOVERNMENT AGENCIES

USAID: The U.S. Agency for International Development serves as the secretariat for the initiative, helping to coordinate the activities of the 12 partner Agencies. In addition, USAID has committed to provide \$285 million in technical assistance, grants, and risk mitigation to advance private sector energy transactions, and help governments adopt and implement the policy, regulatory, and other reforms necessary to attract private investment in the energy and power sectors.

MCC: The Millennium Challenge Corporation has committed to invest up to \$1 billion in African power systems through its country compacts to increase access and the reliability and sustainability of electricity supply. These efforts include investments in energy infrastructure, policy and regulatory reforms, and institutional capacity building.

OPIC: The Overseas Private Investment Corporation is the U.S. Government's development finance institution, offering financing, loan guarantees, and political risk insurance to mobilize private capital to help solve critical development

challenges. OPIC has committed up to \$1.5 billion to energy projects in sub-Saharan Africa, including high-capacity centralized projects as well as smaller projects that increase power access. OPIC's work supporting private capital to invest across sub-Saharan Africa extends beyond the six *Power Africa* countries, and the agency operates a full-time office in South Africa staffed by OPIC's Director for African Business Development.

Ex-Im Bank: The U.S. Export-Import Bank has committed to make available through potential loan guarantees up to \$5 billion in support of U.S. exports for the development of power projects across sub-Saharan Africa.

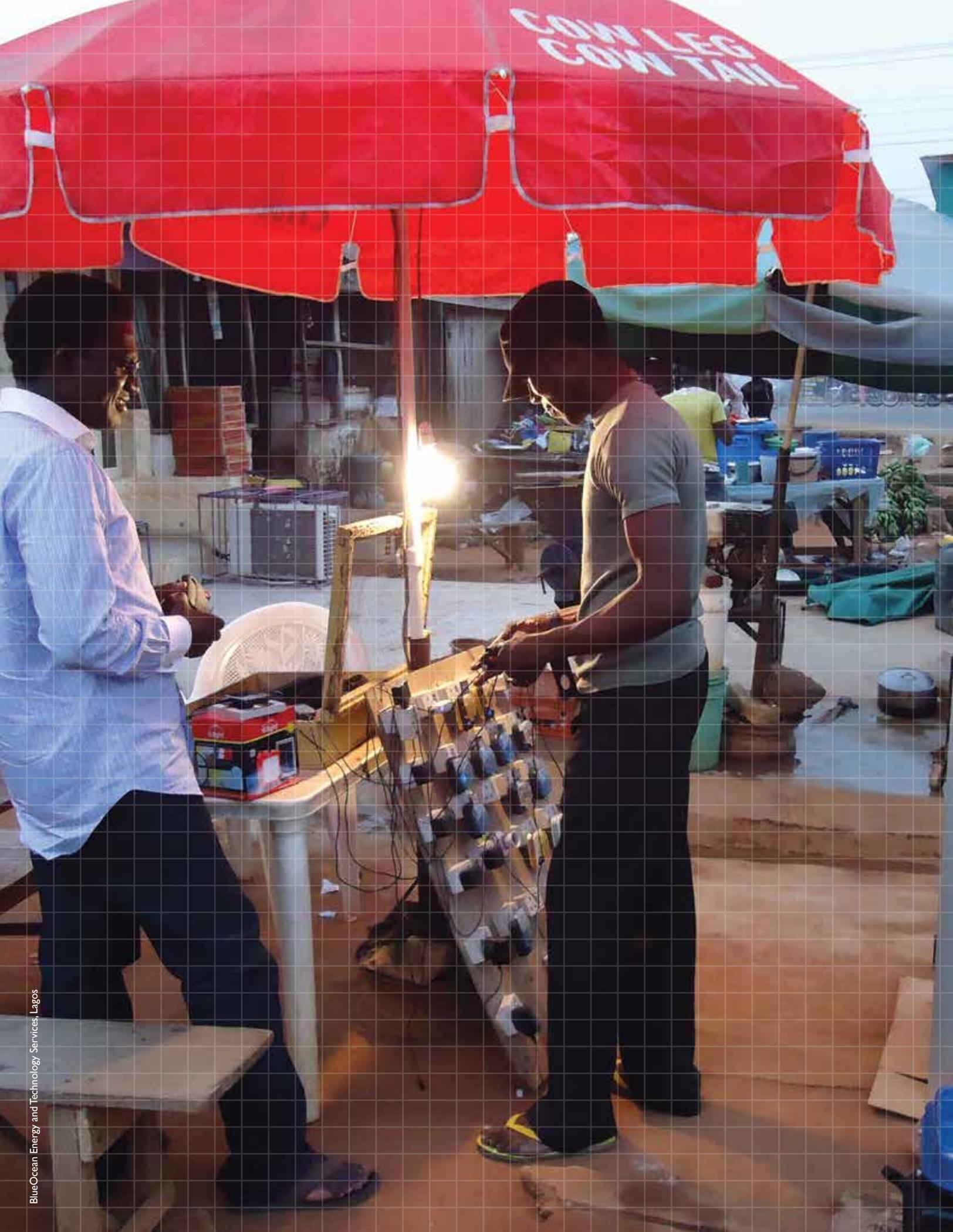
In sum, the U.S. Government has committed more than \$7 billion in financial support and guarantees through *Power Africa* agencies, and has galvanized private sector commitments over \$18 billion.

State, OPIC, USTDA: Developed in partnership with the U.S. Department of State, OPIC and USTDA, the U.S.-Africa Clean Energy Finance (ACEF) initiative provides early-stage project planning assistance and development capital for clean energy solutions. The \$20 million initiative, which is supported by the recently launched U.S.-Africa Clean Energy Development and Finance Center based in Johannesburg, South Africa is funding innovative projects in Africa with high development impact.

USADF: The U.S. African Development Foundation launched a \$2 million Off-Grid Energy Challenge, co-funded by General Electric, providing grants of up to \$100,000 to African-owned and operated enterprises. These enterprises will develop or expand the use of proven technologies for off-grid electricity benefitting rural and marginal populations. Round I, executed in 2013, resulted in six awards of \$100,000 each for African companies in Nigeria and Kenya to deploy renewable resources and stimulate economic activity. With additional funding from USAID, Round II, planned for 2014, will expand to all *Power Africa* countries deploying \$1.8 million in awards, surpassing USADF's original financial commitment.

In sum, the U.S. Government has committed more than \$7 billion in financial support and guarantees through *Power Africa* agencies, and has galvanized private sector commitments over \$18 billion.

Increasing the availability of power — and more reliable, cleaner power — is one step on a continuum of effort to bringing electricity to sub-Saharan Africa. The next step is making sure that the population has access to that power.





ACCESS INCREASING ENERGY ACCESS VIA SMALL-SCALE SOLUTIONS



Increasing access is about ensuring that the electricity generated is made available to much broader segments of the population. Beyond disparities between rural and urban access rates, there exists a genuine nexus between gender inequality, poverty, and lack of access to reliable and affordable energy. *Power Africa* is committed to looking at the drivers behind differences in access and how we can help facilitate increases in access for African citizens: young and old, men and women, urban and rural.

While *Power Africa* is supporting investment in new generation and grid expansion, its access goals cannot solely be met through grid-based activities. Its efforts supporting grid-based power will be complemented by off-grid and small-scale efforts.

REACHING THE “UNREACHABLE”

Just as the scaling-up of mobile telephones allowed developing nations to bypass the deployment of thousands of miles of expensive and insecure copper-wire phone lines, energy innovations fostered by *Power Africa* will spark progress in the most remote rural regions of sub-Saharan Africa. These innovations include decentralized off-grid and small-scale solutions that can be developed, deployed, and delivered quickly to the most inaccessible corners of Africa’s rural communities.

At the U.S. Africa Energy Ministerial in June 2014, *Power Africa* launched *Beyond the Grid*, a new framework focused on unlocking investment in off-grid and small-scale solutions. *Beyond the Grid* will be critical to the effort of expanding access to the more than 240 million people living without electricity in rural and peri-urban communities across the six *Power Africa* focus countries. *Beyond the Grid* uses the transaction-based model to accelerate transactions. *Beyond the Grid* will also advance the policy and regulatory frameworks necessary to overcome recurring constraints in the small-scale energy space.



The benefit of association is important and significant. Our business partners are taking us more seriously due to the fact that we are part of this initiative.

For me as an African, this just reaffirmed my belief that the U.S. Government cares about the well-being of people beyond its borders. It was very innovative in picking power for development support and in particular in this style.



Gilman Kasiga, CEO, EA-Power

MOVING *BEYOND THE GRID*

Decreases in the cost of technologies, particularly solar; mobile-enabled technology, “pay-as-you-go” systems, and other innovative business models have created a tremendous opportunity for private sector delivery of electricity to remote communities. Fortunately, there are technologies that can provide electrification with less investment in large infrastructure, and that are cleaner and more appropriate to sustainably extend access to rural and remote areas. There are a number of technologies and business models that have proven themselves in pilots and are now ready to expand in scale and scope to address the lack of access in rural and remote areas.

Providing increased availability of, and access to, electricity creates opportunities for women to engage in economically productive activities, as well as improving vital primary health care services, especially during maternal and childbirth emergencies.

Beyond the Grid strives to create an effective enabling environment and to increase access to financial and technical assistance to overcome constraints to small-scale energy production. In conjunction with the White House Office of Social Innovation and Civic Participation and the White House Office of Science and Technology Policy, *Power Africa* hosted two events — one at the White House and a second at Stanford University — and engaged nearly 60 impact investors and venture philanthropists interested in small-scale energy investment in Africa. Through these meetings, *Beyond the Grid* established partnerships with more than 27 investors and practitioners, who have already committed to invest over \$1 billion into off-grid and small-scale solutions to this underserved market. *Beyond the Grid* is also closely aligned with the goals of the United Nations sponsored SE4ALL initiative.

Beyond the Grid will help *Power Africa* dramatically increase the availability of electricity through public and private investment in an intelligent balance of generation, distribution, and capacity development, creating sustainable and effective growth in rural areas.

In partnership with African governments, this increased availability will also do much to end extreme poverty. While all people are impacted by limited access to energy, the burden of being “energy poor” in rural areas is disproportionately borne by women and children. Providing increased availability of, and access to, electricity creates opportunities for women to engage in economically productive activities, as well as improving vital primary health care services, especially during maternal and childbirth emergencies.

Off-grid and small-scale energy solutions are particularly well suited to meeting the energy demands of traditionally underserved populations, and therefore have the potential to dramatically impact the needs of small-holder farmers and their communities.

POWER



Andrew Herscovitz for USAID



NextGen Solawazi's solar power plant in Kigoma will have the capacity to power around 50,000 households even in its pilot stages. It is expected to generate about 10 gigawatts of clean electricity each year, reducing annual carbon dioxide emissions by about 10,500 tons. OPIC financing and USTDA technical assistance made possible through the ACEF initiative are helping us bring this project to implementation and deliver power to Tanzania.



Mayank Bhargava, Managing Director, NextGen Solawazi Limited

BUILDING ON THE TRANSACTION MODEL

The *Beyond the Grid* sub-initiative leverages *Power Africa*'s innovative transaction-focused model to galvanize collaboration, accelerate transactions, and drive further systemic reforms already underway by host country governments.

The framework will create an effective enabling environment with increasing access to financial and technical assistance historically not available to small energy businesses. Additionally, *Beyond the Grid* will incorporate new financial tools, such as investment structures that blend donor and private capital, aggregating and de-risking small energy projects in Africa, and making them available as a new asset class for investment at scale.

Just as *Power Africa* has seen much interest from the private sector in power sector activities on the grid, there has been a concomitant interest in investment in smaller scale and off-grid projects by impact investors. This strong interest is confirmation that the private sector can drive solutions in the off-grid sector as well as in large-scale generation projects.

Power Africa is supporting public sector capacity building that both enables private investment and improves the public sector's capacity

to support rural and renewable energy projects that can attract private capital.

There is a need to improve the quality of small-scale systems to better serve consumers in terms of safety, reliability, performance, and cost comparison. The U.S. Department of Energy is leading the effort to develop and implement a quality assurance framework for mini-grids based in sub-Saharan Africa through DOE's National Renewable Energy Laboratory (NREL).

To further enhance the environment for private investment, *Power Africa* is providing market intelligence and information at the national level, such as assessing the economic prospects for clean energy investment in the off-grid space, through Climatescope 2014 in conjunction with Bloomberg New Energy Finance and the U.K.'s Department for International Development.

The following are a few examples of *Beyond the Grid*'s private sector driven approach in collaboration with host governments.

Biomass Power in Kenya. *Power Africa* has worked with Cummins Cogeneration, a subsidiary of an American company and a pioneer in

biomass based power generation, to finalize an agreement for a generation facility in Baringo. Mesquite wood, an invasive species in Kenya, will be used as fuel in a gasification technology that converts biomass into three components, including electricity which can be fed to the national grid, isolated small-scale systems, or to captive customers. Collection of mesquite wood will also provide jobs and income for rural Kenyans, boosting Baringo's economy.

USAID's Development Credit Authority (DCA). USAID has used its DCA loan guarantee tool to advance several projects. Through its partial credit guarantees, DCA has mobilized local financing that encouraged private lenders to invest in off-grid solutions. In Tanzania, a pipeline of small-scale, renewable energy generation projects has been developed through a collaboration among the Tanzania Rural Energy Agency, private sector investors, and other donors. East Africa Power, a 10 MW hydro small power producer, received a \$12 million portable loan guarantee via *Power Africa*. The guarantee has served to make the project more attractive to local financial institutions.

OPIC Impact Investment: OPIC is the U.S. Government's largest impact investor, committing \$222 million in 2013 to projects with an expressed intent at startup to address social and environmental concerns, including renewable energy. This includes OPIC's nearly \$10 million in support to NextGen Solar for development of a 5 MW solar plant in Tanzania — exactly the type of small-scale renewable energy impact investors can help to advance.

USADF's Off-Grid Challenge. USADF launched and implemented an *Off-Grid Challenge* in collaboration with General Electric and USAID to promote innovative and scalable off-grid solutions. From a pool of \$2 million, grants up to \$100,000 each are awarded to African companies and organizations providing off-grid solutions that deploy renewable resources and boost local economies. Six awards have been made so far in Kenya and Nigeria, and a second round will award 18 grants across six *Power Africa* focus countries.

One first round winner, Green Village Energy Group, made remarkable progress on its winning project of scaling up a small six kilowatts system in the rural community of Egbeke in Rivers State, Nigeria. The project will put electricity into approximately 140 homes as well as small businesses and will impact at least 1,500 residents, with the potential to be replicated in neighboring villages. Another first round winner, Afrisol Energy, will use bio-digesters to produce electricity through bio-gas for small businesses and for a school in Nairobi.

BEYOND THE GRID PRIVATE SECTOR PARTNERS

Bamboo Finance	Global Off-Grid Lighting Association	Persistent Energy Partners
Acumen Fund	Gray Ghost Ventures	Powerhive
BBOX	Invested Development	Schneider Electric
Capricorn Investment Group	Khosla Impact	Shell Foundation
CrossBoundary LLC	LGT Venture Philanthropy	Solar Sister
d.light	Liberia Energy Network	SunFunder
Embark Energy	Low Carbon Enterprise Fund	The Tony Elumelu Foundation
Energiya Global	Mosaic	United Nations Foundation
Fenix International	Off Grid Electric	Virunga Power

U.S.-Africa Clean Energy Finance Initiative. Developed in partnership with the U.S. Department of State, OPIC and USTDA, the ACEF initiative provides early-stage project planning assistance and development capital for clean energy solutions. The \$20 million initiative is funding innovative projects in Africa with high development impact.

- Off-Grid Electric Tanzania Ltd. (OGET) is a Tanzania-based company that offers off-grid energy solutions through pay-as-you-go solar home systems in rural Tanzania with primary beneficiaries being low-income individuals. OGET received a \$200,000 ACEF grant to strengthen several key operational areas (e.g., software and analytics, distribution and operations, hardware design, manufacturing, and supply chain optimization and management), which will allow the business to ramp up operations to a level that will convince potential investors and lenders of its business case and exponential growth potential.
- Husk Power Services is a U.S. company and innovator in distributed generation aimed at serving off-grid populations. Husk seeks to establish the business model and attract private sector investment for an expansion of up to 250 biomass mini-grid facilities throughout Tanzania. These mini-grids are intended to serve approximately 55,000 households by 2017 and in aggregate provide more than 10 MW of newly installed capacity. Husk's model of providing locally-based, off-grid, low cost, mini-power plants in rural Tanzanian villages has the potential for deep impact in a country where more than half the residents live in rural communities far from the main grid. ACEF funds will support start-up costs related to the design, development, and installation of 20 pilot biomass mini-grid facilities in Tanzania.
- d.light Design is a U.S. company that manufactures and distributes solar lighting and power products. ACEF support will be used for the design and implementation of a solar lighting program in Nigerian schools that will create an educational campaign to develop awareness of renewable energy and provide access to portable solar lanterns to over 600,000 Nigerian students. The program will teach students the importance of replacing inadequate, unhealthy, and expensive kerosene light with solar lighting as a means to improve study habits and benefit their households.





QUALITY POLICY DRIVES INVESTMENT

In sub-Saharan Africa, generation, transmission, and distribution services have been hindered by deficits in technical and management capacity, fluctuations in the political and economic environments, and systemic constraints. The limited power available in sub-Saharan Africa is subject to high losses and limited cost recovery, a paradigm that undermines system economics and limits infrastructure investment.

Meaningful growth in generation and access can only be sustained in an environment where infrastructure investments yield positive financial returns. No matter the market structure, certain fundamentals such as tariff structures that cover the costs of generating and delivering the consumed power, the availability of creditable consumers, and equitable access to common transmission and distribution infrastructure are crucial enablers of broader sector investment. *Power Africa* leverages its transactions to engage on the policies necessary to create an enabling environment for power sector investment.



PROJECT ZANZIBAR INTERCONNECTOR & DISTRIBUTION
INFRASTRUCTURE PROJECTS AT ZANZIBAR AND EXTENSIONS

CLIENT MILLENNIUM CHALLENGE ACCOUNT 

ENGINEER ESB INTERNATIONAL  

CONTRACTOR SYMBION SYMBION POWER LLC 

SUB-CONTRACTOR (CIVIL WORKS) SALEM CONSTRUCTION LTD
P. O. Box 3398, ZANZIBAR. 

SAFETY FIRST
USALAMA KWANZA

SAFETY FIRST
RESPECT ALL ACCORDS
NO ENTRY FOR OTHERS
TO THIS PROPERTY
WAZOYIWAATI!

DANGER
ALL ELECTRICAL
EQUIPMENT IS
LIVE. DO NOT
PROCEED WITHOUT
PROPER TRAINING

ENABLING POLICY ENVIRONMENT

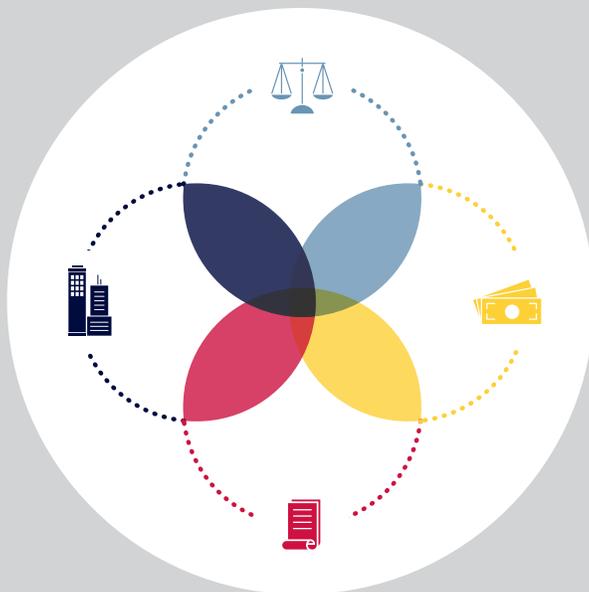
Power Africa is founded on the premise that driving transactions and private investment will encourage and prioritize progress in policy, legal and regulatory

reform, enabling more private investment. Success in strengthening the enabling environment is critical to the growth of a sustainable energy sector in sub-Saharan Africa.

NATURAL RESOURCE



With a policy and regulatory framework supportive of private investment and the integration of innovative technologies, the continent's rich hydro, wind, solar, biogas, natural gas and geothermal potential can be harnessed to meet the continent's energy needs.



ENERGY ACCESS

In order for optimal energy to be accessible to the population, investments must be made in appropriate infrastructure to transmit and deliver this power, and commercial structures must support the operations and maintenance of these systems.



● Business

Power Africa is working with the private sector to identify and address road blocks to investment in the energy sector, including local and international project developers, thereby increasing opportunities for growth, adoption of new technologies, and success of new business models in Africa's energy sector.

● Legal

Power Africa is working with host country governments to ensure their energy sector laws support the growth and operations of a commercially viable power sector and are in line with international best practices.

● Investment

Power Africa is working with multilateral development banks, donor agencies and the private sector to support the mobilization of capital investment in viable power projects.

● Policy and Regulation

Power Africa is working with host country governments to build the capacity of regulatory bodies to ensure that they can efficiently provide oversight and governance to the power sector.

INVITING PRIVATE SECTOR PARTICIPATION

As countries move toward market-based reforms, transitioning from state-run power systems to private sector participation, they are demonstrating their determination to achieve sustainable and economically viable operations. Market-based approaches are possible because governments have committed to allowing meaningful participation by the private sector. This transition enables significant investment and access to a range of technical and managerial resources, but requires legal, regulatory, and policy reforms that strengthen the enabling environment for private investment.

That investment in power generation requires the development and negotiation of power purchase agreements, and the existence of credit-worthy off takers, i.e., commercially viable utilities that deliver power to consumers and set market-based, cost-reflective tariffs. Each of these elements requires significant commitment, institutional capacity, and methodical transition over time in order to lead to growth and sustainability of the sector.

***Power Africa* is building upon the substantial efforts that African governments, the U.S. Government, and other multilateral and bilateral donors have advanced in the power sector in sub-Saharan Africa over the last decade.** *Power Africa* aims to create a “one-stop-shop” to ensure that donor and government efforts are coordinated as well as informed by private sector inputs.

With the progressive actions taken by national governments, private investors are finding potential involvement in these countries' power sectors ever more attractive. *Power Africa* is helping countries maximize the full potential of this interest.

Nigeria: Through support from USAID, the U.S. Trade & Development Agency, and the U.S. Department of Commerce, *Power Africa* is supporting the privatization of existing and new generation and distribution projects in the Power Holding Company of Nigeria and the Niger Delta Power Holding Company. *Power Africa's* participation in the privatization evaluation processes ensured transparency, credibility, and adherence to the rules of the solicitation. **The combined improved power supply from this effort will increase generation over the next five years by over 7,500 MW, doubling**



USAID

the current capacity for all of Nigeria. In addition, *Power Africa* support to the development of new Independent Power Projects will add over 2,000 MW of new capacity. Success in these early privatization efforts not only increases available power, but fundamentally changes the realities of the Nigerian power sector, opening the door to myriad investment opportunities while paving the way for new public-private partnerships.

Ghana: The Millennium Challenge Corporation, a key *Power Africa* partner in Ghana, is negotiating a nearly \$500 million compact which, if signed in late 2014, will underpin major reforms in the distribution sector. Investments under the

compact aim to increase the sector's commercial viability and reduce investor risk. **These investments will ultimately improve the reliability and accessibility of electrical power for over 2.6 million customers.**

Liberia: As much as any nation in sub-Saharan Africa, Liberia needs private investment to rebuild an electricity infrastructure that was all but totally destroyed by a civil war that ended in 2003. ***Power Africa, through close collaboration with the Government of Liberia, is helping to provide commodities to expand the grid in Monrovia, build pilot renewables-based electrification projects, and improve the regulatory and legal environment necessary to attract private sector partners.***

Simultaneous efforts are underway to build government capacity to oversee the implementation of a major off-grid and small-scale solutions program funded by other donors. Liberia is also exploring opportunities to utilize funding from the Millennium Challenge Corporation to support the expansion of the national grid, and to develop a framework for ensuring that the national utility is commercially viable, well-functioning, and poised to meet the increasing demands for electricity as Liberia's economy continues to grow and diversify. All of these advances provide critical assurances to investors who need to confirm acceptable risks and predictability.

LEADERSHIP FROM THE TOP; CAPACITY THROUGHOUT

Power Africa assists governments in maximizing the use of existing energy sources while expanding and integrating new and cleaner resources, all to ensure improved energy quality.

The transition to private sector partnership relies on the continued and evolving role of government. It relies on strong leadership, vision, and the capacity of the government and its institutions, and increasingly on effective governance. As African governments move toward market-oriented approaches and look to attract increased investment, *Power Africa* is providing analysis, insight, and other resources to support capacity development across the spectrum of the power sector. Technical assistance is, and will continue to be, broad-based and customized to meet the needs of each partner country.

Smart planning in the energy sector calls for effective, transparent use of available resources, including power trading, as well as integration of renewables such as solar, wind, and geothermal, and guaranteeing their consistency to make them more stable. *Power Africa* assists governments in maximizing the use of existing energy sources while expanding and integrating new and cleaner resources. Effective energy sector planning depends on taking advantage of available renewable resources; integrating a balance of solar, wind, and geothermal energy to improve reliability; and instituting a transparent, market-oriented regulatory framework for the electricity sector which includes power trading.

Regardless of the quantities and quality of power generation, the most essential component — service delivery to end users — requires specific expertise, coordination among and between actors, transparent agreements between power producers and off-takers, and market based pricing structures. Quality power systems require reliability, predictability, and accountability across the entire system — from generation to transmission to distribution. A system is only as strong as its weakest link, therefore weaknesses in any one element of the sector will compromise service delivery to the homes and businesses that rely on it.

The structure of the power sector in sub-Saharan Africa will evolve country by country, and will change over time as private sector elements emerge and state-owned institutions transition to a focus on oversight and sector governance. This transition will take time, but will benefit from lessons learned globally, the knowledge of local and international experts, the unique resources and advantages of each country, a willingness to consider long-term sector growth, and the efficiencies of regional planning and solutions.

POWER AFRICA IN ACTION; DELIVERING RESULTS

Liberia's Energy Law. Private investment in Liberia's energy sector has been constrained by the lack of a legal framework. *Power Africa* is providing support to the Government of Liberia as it undertakes a new codification of the country's energy law. Diplomatic engagement has encouraged the government to draft and pass key reform legislation to provide a durable foundation and structure for the power sector as a whole, including the Rural and Renewable Energy Agency. These advances were made possible with coordinated support from MCC, the World Bank, the Department of State and USAID.

Thanks to these efforts, donors and host government partners are working toward a common vision for geothermal development in East Africa that promises to bring even greater geothermal resources online sooner.

Donors Working Together to Harness 15,000 MW of Geothermal Power in East Africa's Rift Valley. Regional institutions and donors, including the African Union Commission, the African Development Bank, German and Japanese aid agencies, the International Finance Corporation, the United Nations' Environment Program, and USAID's East Africa Geothermal Partnership, were implementing their own assistance programs in the geothermal space with limited coordination. As a result, the exploitation of East Africa's rich, clean geothermal resources has been slow when compared to the rest of the world's geothermal production.

For this reason, *Power Africa* embedded a full-time Transaction Advisor within the AfDB in Nairobi to serve as a resource to *all* geothermal donors and host government partners. She maps and coordinates all donor efforts and facilitates the development of individual geothermal strategies for each country and for the region. Thanks to these efforts, donors and host government partners are working toward a common vision for geothermal development in East Africa that promises to bring geothermal resources online sooner.



Privatization in Nigeria. The Government of Nigeria has taken important steps toward privatization in the power sector and has achieved early wins. *Power Africa* is working directly with government partners to capitalize on this momentum by establishing a cost-reflective tariff regime, reducing distribution and transmission losses, and creating an enabling environment to further strengthen the transmission network. The Government of Nigeria has issued licenses to 17 Independent Power Producers (IPPs), and the private sector is currently in the process of negotiating power purchase agreements (PPAs) with the Nigerian Bulk Electricity Trader (NBET). NBET recently concluded the negotiation of the PPA with

Azura Energy, the first private IPP to go through this process. USAID legal and financial support helped address critical issues during the negotiations of these agreements. *Power Africa* is also engaged with NBET regarding the negotiation of other PPAs with JBS Wind Energy, NSCP Capital, ExxonMobil, and Chevron. These PPA's and other agreements will help create a template for other *Power Africa* countries.

USTDA sponsored a visit to the United States to introduce officials from Nigerian distribution companies to technologies that can increase service reliability and supply optimization across grid networks. As a result of this visit, USTDA is supporting follow-on

project preparation activities to help three of the companies reduce distribution losses by updating and modernizing their networks and management information systems. In addition to USTDA and USAID, the Departments of Energy and Commerce were also instrumental in advancing this effort.

Negotiating a Landmark Agreement in Ethiopia.

The Government of Ethiopia (GOE) is in the process of negotiating its first PPA for the Corbetti Geothermal facility. *Power Africa* Transaction Advisors developed and implemented four capacity building workshops for the Ethiopian Electric Power Company to support this process, including workshops focused on finance,

commercial agreements, reservoir appraisal, and power interconnection. By working through the process of negotiating its first PPA with assistance from USAID and AfDB's African Legal Support Facility, the GOE has raised the visibility of the country and its market potential.

Smart Meters in Ethiopia. dVentus Technologies, an American/Ethiopian company, is helping to reduce commercial losses and improve the efficiency of the grid through the installation of two million smart meters. dVentus will also manufacture generators, converters, wind turbines and smart grid applications which will be used to make Ethiopia's energy infrastructure more robust. USAID and ACEF are supporting these activities.

Change Management in Ghana. *Power Africa* is working with the Government of Ghana to help provide the tools and international best practices to manage the transition from public to private operation of its distribution sector. USTDA is working with two electricity companies in Ghana to develop plans to expand transmission networks and update distribution systems in order to increase access to power across the country, including in rural communities which are not currently served by existing distribution systems. In addition to USTDA, MCC and USAID are also supporting this effort.

Cross Border Trade and Power Pool Development. *Power Africa*, through a partnership with the Clean Energy Ministerial's Clean Energy Solution Center, led by the U.S. Department of Energy and the Australian Department of Industry, will connect policymakers in Africa with clean energy experts and best-practice resources. The Clean Energy Ministerial is a global forum to share best practices and promote policies and programs that encourage and facilitate the transition to a global clean energy economy.

Power Pricing in Tanzania. *Power Africa*, with support from DOE, MCC, and USAID, is supporting efforts by Tanzania's national utility, Tanzanian Electric Supply Company (TANESCO), to phase out high cost emergency power plants, while reforming operations and introducing market incentives to meet power demand through lower cost solutions, such as developing natural gas and off-grid renewable resources. The Tanzanian Government is also working toward an MCC Compact that is expected to include a comprehensive program of sector reforms that will result in a more efficient, well-managed, and creditworthy utility that will operate effectively in a competitive market place.

Clean Energy Solutions Center The Clean Energy Solutions Center is a Web-based resource that helps governments design and adopt policies and programs that support the deployment of clean-energy technologies. The Solution Center's three main offerings are Ask an Expert policy assistance, training and peer-to-peer learning forums, and a rich library of technical tools

and publications. These services are provided at no cost to users and are available to stakeholders across Africa. For example, the Solutions Center has provided expert assistance on the design of feed-in tariffs in Ghana, an analysis of the relationship between energy access and health sector in Kenya, and national renewable energy and energy efficiency plans for the 15 ECOWAS member states.



In understanding and gaining regulatory support for our initiatives we have been advised by *Power Africa* in giving us better insight into the regulatory developments in Tanzania and the proposed reforms of TANESCO. As a private power supplier targeting captive market sales, this advice has been invaluable in developing and delivering these power solutions directly to private customers. On the ground in Tanzania, the *Power Africa* team has taken initiative to both understand and to navigate the process for us to obtain a Producer License.



Ira Green, GG Energy Holdings

Wind Power in Kenya. Through the combined efforts of USAID, OPIC and AfDB, *Power Africa* is strengthening Kenya's capacity to integrate wind energy into its power grid. Through financing from OPIC, *Power Africa* will provide up to \$250 million in investment guarantees to support development, construction, commissioning, and operation of Aldwych International's 310 MW wind power generation project near Kenya's Lake Turkana. *Power Africa* also coordinated with the AfDB to provide other necessary financial guarantees for the project, set to start phased operations in mid-2015. *Power Africa* is also supporting the 100 MW Kipeto project which, combined with other wind projects, could potentially provide power to more than 800,000 homes and businesses. Supporting both of these transactions, *Power Africa* is providing technical support through USAID to ensure the electrical grid can absorb the intermittent power associated with wind farms.

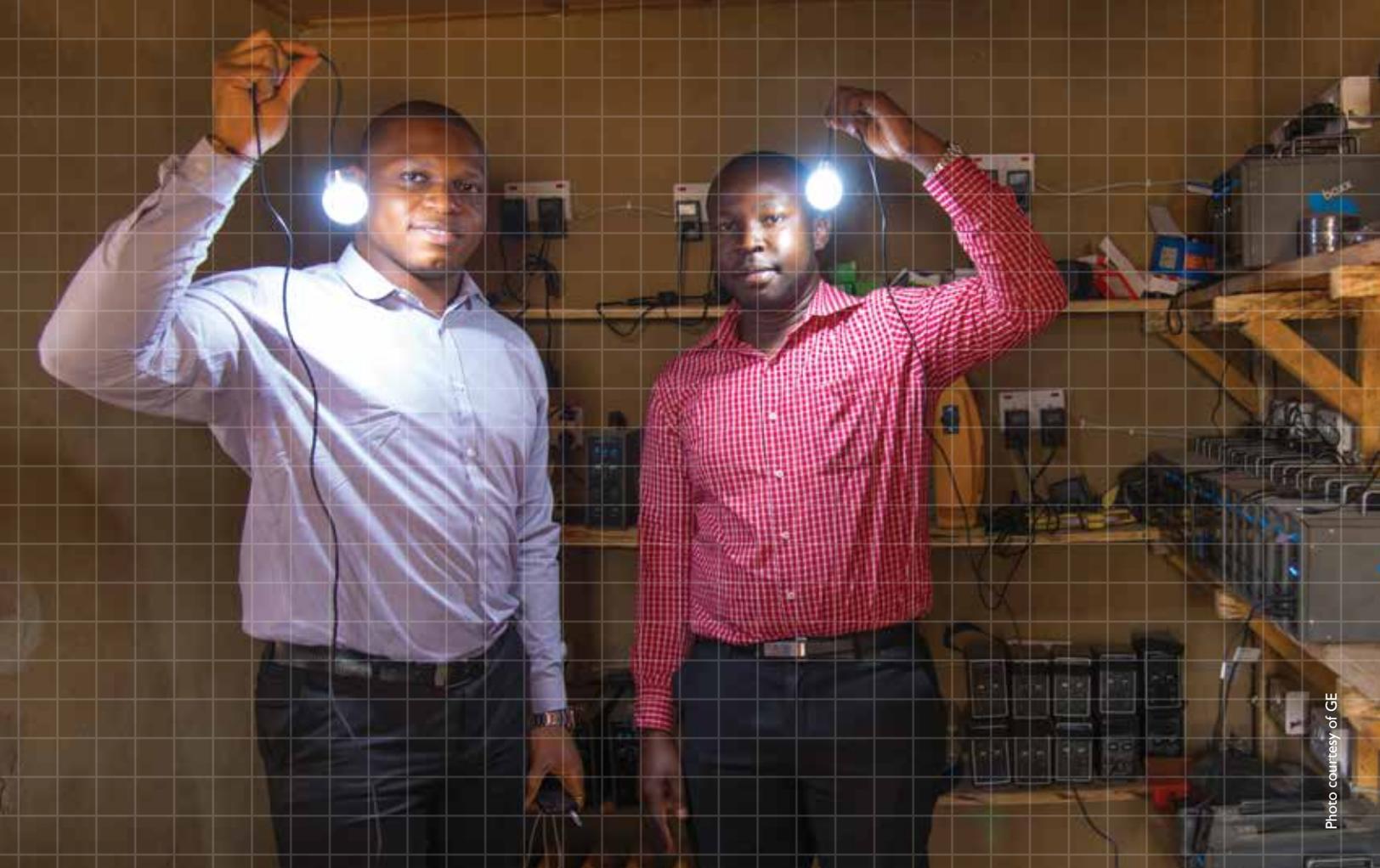


Photo courtesy of GE

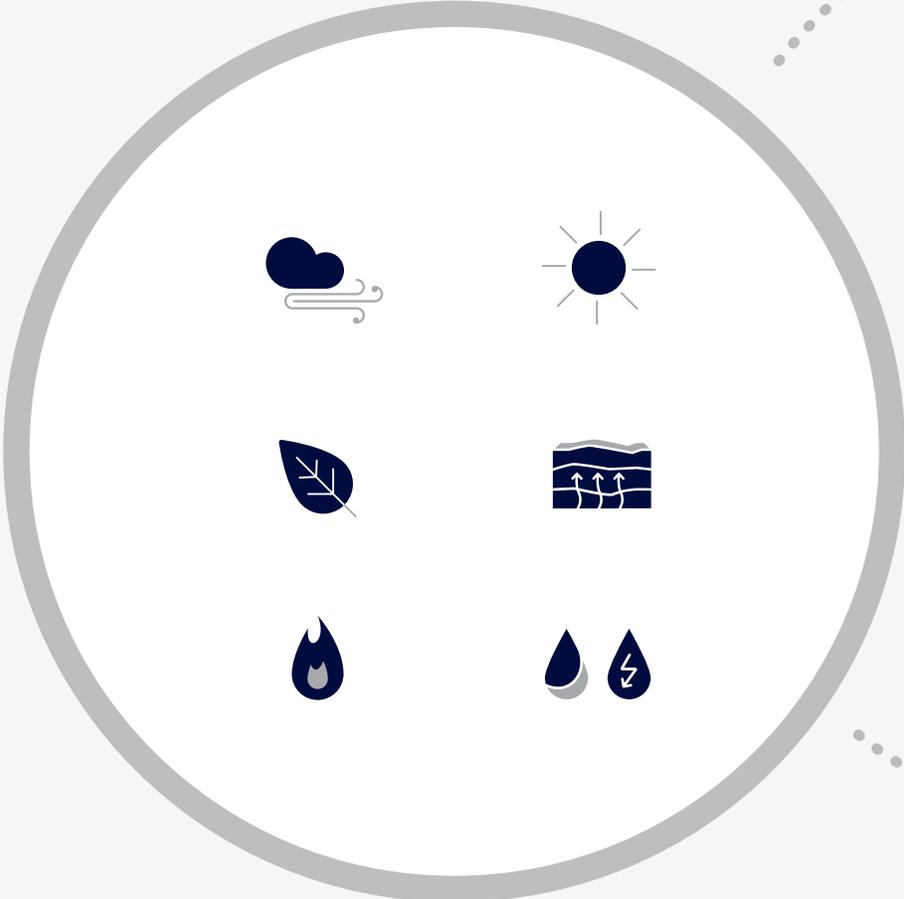
Continued trust and cooperation is essential to ensuring that Africa's power sector reaches its full potential.

Solar Power in Tanzania. *Power Africa* and other donors worked with the Tanzanian energy regulator to increase the length of the standard Power Purchase Agreement for small renewable generation from 15 to 25 years. The increase aided NextGen Solawazi Ltd. in accessing OPIC financing and USTDA technical assistance for a 5 MW solar photovoltaic power plant in Kigoma. USTDA is also partnering with a U.S. energy developer to fund a project that will evaluate cost-effective solar photovoltaic solutions that can provide dedicated power to the University of Dodoma's campus and the surrounding community. In addition to USTDA, OPIC and USAID have also supported these projects which lay the groundwork for favorable terms for future private sector financing arrangements.

The achievements recorded by *Power Africa* in only one year required an extraordinary level of trust and cooperation among all of the *Power Africa* partners — the energy sector companies, African governments, U.S. Government Agencies, and multilateral and bilateral donors. That continued trust and cooperation is essential to ensuring that Africa's power sector reaches its full potential.

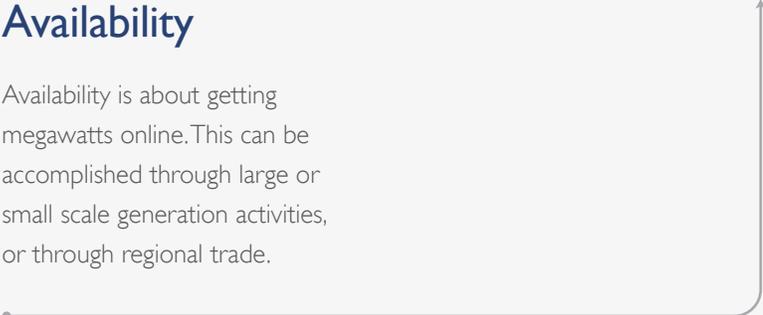
EFFECTIVE POWER DISTRIBUTION

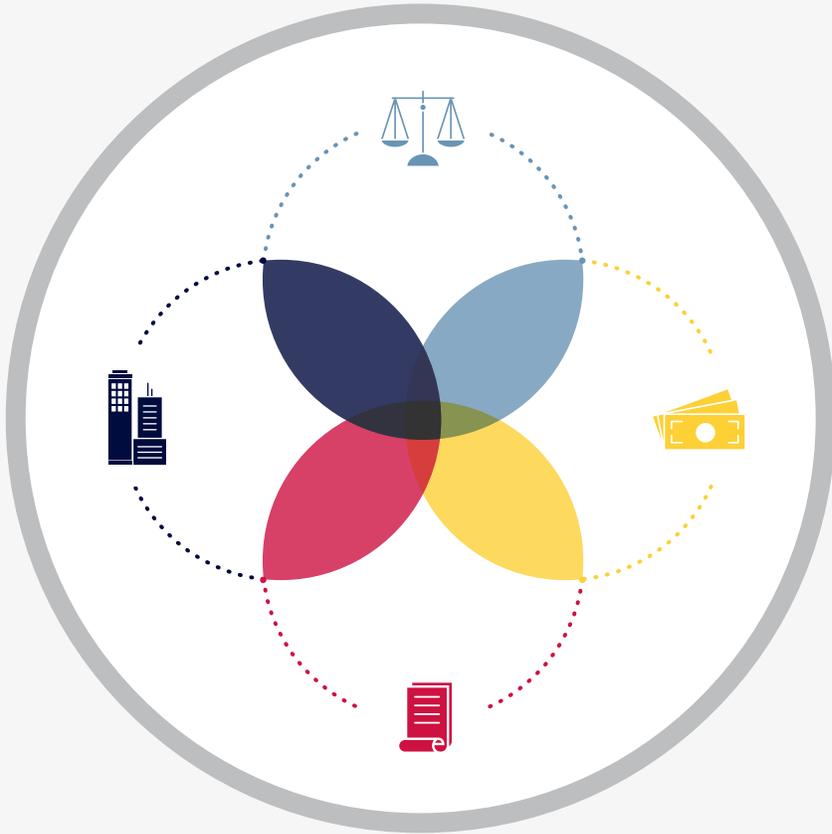
Effective power distribution is dependent upon three related yet distinct aspects of the energy sector: Availability, Access and Quality.



Availability

Availability is about getting megawatts online. This can be accomplished through large or small scale generation activities, or through regional trade.



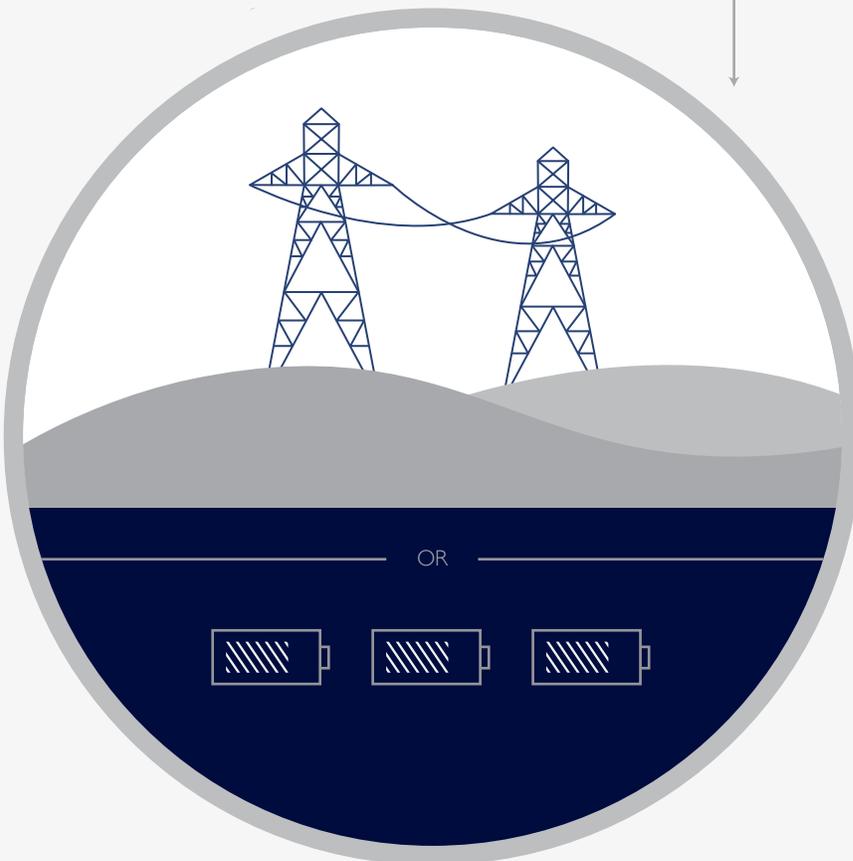


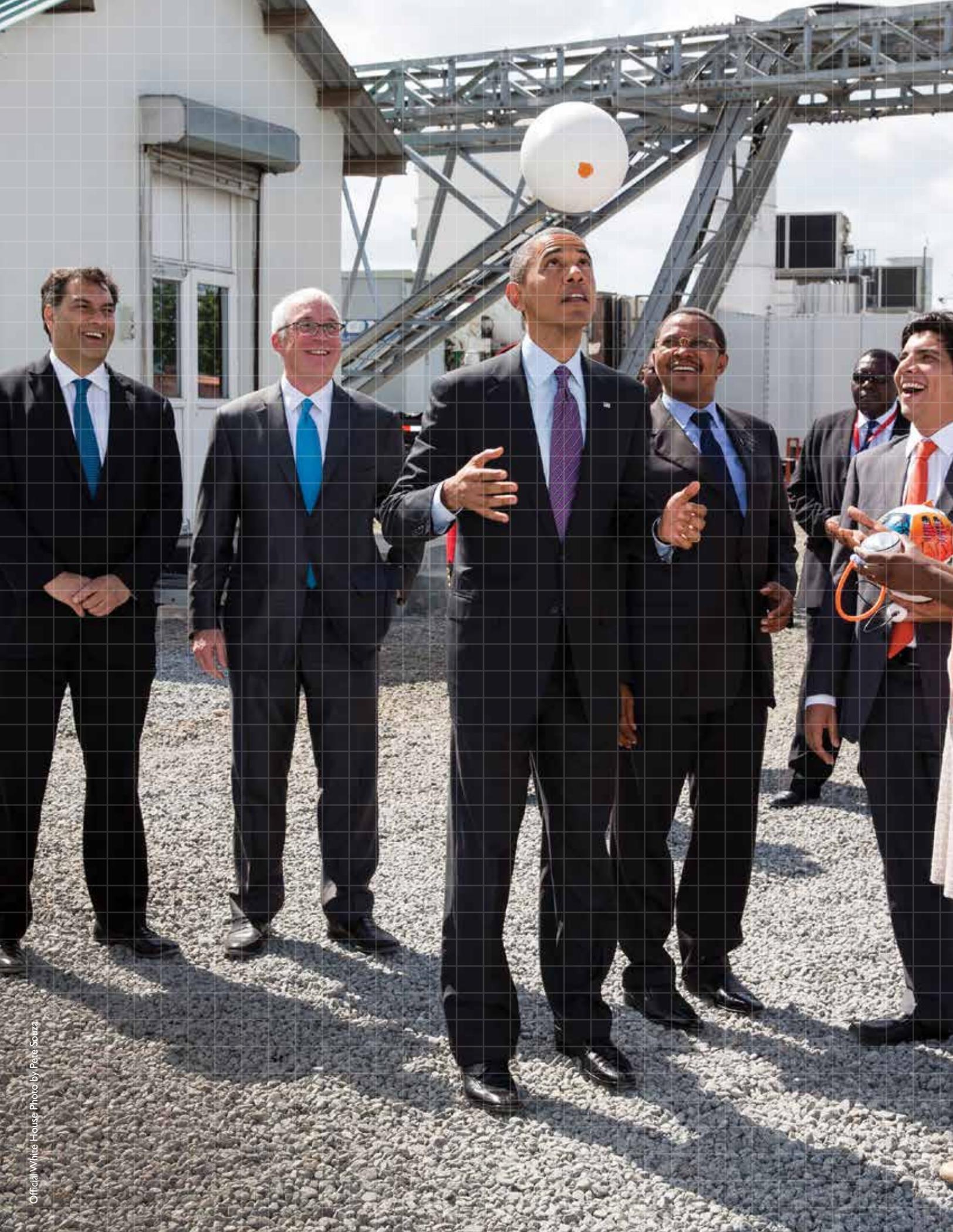
Quality

Quality is about strengthening the legal and regulatory frameworks as well as the institutions that manage the sector to improve efficiency, reliability and sustainability.

Access

Access is about getting those megawatts to the people and businesses that need them.







LOOKING FORWARD

At the first anniversary of President Obama's launch of *Power Africa*, there is much to celebrate. In conjunction with power sector investors, African governments, and donor partners, *Power Africa* is facilitating energy projects representing nearly 8,000 megawatts of power — enough to light more than 5 million homes in sub-Saharan Africa.

INCREASING PARTNERSHIP

This strong initial success would not be possible without the vision of the African governments themselves. Nor would it have been possible without the private sector partners and donors committed to increasing the availability of, access to, and quality of power throughout sub-Saharan Africa.

Governments from focus countries and throughout sub-Saharan Africa have demonstrated progress on existing power sector reform plans, while making new commitments to further reform their power sectors. Private sector partners from all over the world have been equally enthusiastic in their reactions to these commitments to reform. The private sector has shown tangible support for *Power Africa* through more than \$18 billion in commitments by 39 companies, including \$1 billion in commitments to the *Beyond the Grid* initiative by an additional 27 impact investors, developers and distributors of off-grid and small-scale energy solutions.

President Barack Obama does a header with a Soccer ball at the Ubungo Power Plant in Dar es Salaam, Tanzania, July 2, 2013. The ball is able to create and store kinetic energy as a battery as it is used. Standing with the President, from left, are: Paul Hinks, CEO Symbion Power; Jay Ireland, President and CEO of GE Africa; President Jakaya Kikwete of Tanzania; Victor Angel, Vice President of Product Development at Uncharted Play; and Jessica Matthews, Co-founder and CEO of Uncharted Play. (Official White House Photo by Pete Souza)

Deep engagement with *Power Africa* by African governments and the U.S. and African private sector was highlighted at the U.S.-Africa Energy Ministerial (USAEM), held in Addis Ababa, Ethiopia in June 2014. As a direct outgrowth of President Obama's travel to Africa in 2013, the USAEM included collaborative discussion on critical energy issues, including energy governance, energy project financing, small-scale grid development, power grid reliability, technical exchange, natural gas utilization, energy efficiency, and renewable energy deployment. The USAEM included a specific panel on *Power Africa* and its next steps. Led by U.S. Energy Secretary Ernest Moniz, the USAEM included high-level participation from the U.S. Government as well representatives from 42 African countries, the African Union, the World Bank, the African Development Bank, and over 50 U.S. and African energy companies. The USAEM ended with a clear mandate for the U.S. Government to continue to work with its African counterparts and the private sector to facilitate the development of power projects throughout the continent.

Power Africa's progress over the past year has benefited from focused and targeted coordination between multilateral and bilateral donors active in supporting power sector investment and reforms throughout sub-Saharan Africa. *Power Africa's* partnerships with the World Bank Group, the African Development Bank, the African Union, the European Union, and bilateral donors including the United Kingdom's Department for International Development, the Danish International Development Agency, the German Development Bank Kreditanstalt für Wiederaufbau, the Norwegian Agency for Development Cooperation, the Japan International Cooperation Agency, the Swedish International Development Cooperation Agency, and the Korea International Cooperation Agency have been, and continue to be, essential to the success of *Power Africa*.

While *Power Africa* is off to an excellent start, much remains to be done to meet the goal of 10,000 MW of power generation.

THE PATH FORWARD

Powering sub-Saharan Africa is a long term effort and requires both vision and planning. While *Power Africa* is off to an excellent start, much remains to be done to meet the goal of 10,000 MW of power generation. Even more needs to be done to meet President Obama's goal of doubling access to electricity in sub-Saharan Africa. Continued investment from the private

sector for both on-grid and off-grid solutions, continued commitment to reform on the part of African governments, and continued support and coordination from critical multilateral and bilateral donors are all needed to help African nations meet their energy goals.

The future of *Power Africa* relies on the ownership by its African government partners. The countries of sub-Saharan Africa also increasingly recognize the need to work together to strengthen regional power infrastructure and the institutional capacity that will nurture regional cooperation. Collectively, they are working to create a vision for ongoing and sustainable growth and investment in power capacity, and a dramatic increase in access to power for their citizens across all of sub-Saharan Africa.

Key transformational projects under *Power Africa* have achieved financial close; now the hard work of project completion is required to bring the power online and make it accessible to the millions of households and businesses that currently lack access to reliable, cost-effective, and clean electricity. There has been significant progress in integrating the tools and resources of the United States Government and its partners under *Power Africa*, and engagement with the private sector and African governments is increasingly seamless. There are many more opportunities waiting to leverage this cooperation more effectively and to provide new and enhanced services to private sector and government partners.

As *Power Africa* enters its second year, it will seek to incorporate lessons learned since its launch. Opportunities exist for augmented and specialized transaction advisory support, greater commercial engagement and trade ties with U.S. businesses, broader regional geographic focus within sub-Saharan Africa, and partnership with new donors, financial institutions, private sector partners, and governments. There are also additional steps that African governments can take, and in many cases already are taking, to improve the investment climate and ultimately to attract additional private sector investment.

A BRIGHTER FUTURE

The success of *Power Africa* will be that of sub-Saharan Africa. **The legacy of Power Africa will not be measured in terms of megawatts alone but by the opportunities those megawatts create** — opportunities that contribute to the economic growth, development, resilience, and strength of the continent and its people.





U.S. GOVERNMENT SUPPORT CAPABILITIES

Project Development,
Project Structuring, Project
Financing, Post-Financing
Support, and Policy Reform

U.S. Agency for International Development (USAID) — provides targeted technical assistance to advance specific development objectives; provides program management support to *Power Africa*

Key Capabilities:

- Posted Transaction Advisors in all six *Power Africa* countries to assist in advancing agreements between public and private partners
- Contributes to multi-donor funds such as the African Union's Geothermal Risk Mitigation Facility, the African Legal Support Facility, and the African Development Bank's Sustainable Energy Fund for Africa
- Provides technical assistance to support Mission-led energy initiatives in *Power Africa* countries
- Offers loan guarantees to African financial institutions through USAID's Development Credit Authority

Millennium Challenge Corporation (MCC) — a U.S. foreign aid agency that partners with poor but wellgoverned countries to reduce poverty and promote economic growth

Key Capabilities:

- Increases access to electricity by investing up to \$1 billion in African power systems through MCC grants
- Awards financial support for energy infrastructure projects determined by partner countries
- Motivates partner countries to implement sector reforms, regulations, governance and utility changes to make the power sector more commercially viable
- Provides technical assistance and management support for ministries, regulators and utilities

Overseas Private Investment Corporation (OPIC) — supports U.S. private sector investment in emerging markets by offering capital and risk mitigation tools

Key Capabilities:

- Direct loans and guarantees up to \$250 million with maturities as long as 20 years on projects that meet minimum U.S. ownership requirement
- Allocates political risk insurance; specialty coverage available for investments in the renewable resources sector and provides support for private equity investment funds
- Supports project development funding to clean energy ventures through the U.S.-Africa Clean Energy Finance Initiative (U.S.-ACEF), a \$20 million initiative, co-sponsored with the U.S. State Department and Trade and Development Agency

Export-Import Bank of the United States (EX-IM) — assists in the financing of U.S. goods and services to international markets

Key Capabilities:

- Issues fixed-rate financing to credit worthy international buyers in both the private and public sector
- Provides loan guarantees for financiers of foreign buyer's in the purchase of U.S. capital equipment and services
- Support export credit Insurance to cover risk of buyer nonpayment for commercial risks (e.g., bankruptcy) and certain political risks (e.g., war or the inconvertibility of currency)

U.S. Trade and Development Agency (USTDA) — provides grant-based project planning assistance to mobilize capital for infrastructure in developing and middle-income countries

Key Capabilities:

- Supports feasibility studies and pilot projects to provide the required comprehensive analysis for major infrastructure projects to achieve successful financing and implementation
- Provides technical assistance to support legal and regulatory reform related to commercial activities and infrastructure development, the establishment of industry standards, and other market-opening activities
- Hosts reverse trade missions to the U.S. for overseas project sponsors to observe the design, manufacturing, demonstration and operation of American products and services which can help the officials achieve their development goals
- Provides grant-based project planning through the U.S. Africa Clean Energy Finance initiative

U.S. Department of State (DOS) — advances the political and economic dialogue on transformational energy policies through diplomacy, trade & investment promotion services, technical assistance and partnerships and bilateral programs

Key Capabilities:

- Conducts senior level advocacy with host governments to advance legal, regulatory, and institutional reforms that contribute to an enabling environment for trade and investment
- Provides technical assistance to support regulatory and legal reform through the Energy Bureau's Energy Governance and Capacity Initiative (ECGI)
- Demonstrate leadership by developing economic partnerships, including Sustainable Energy for All in Ghana

U.S. Department of Commerce (Commerce) — facilitates global trade and strengthens the international economic position of the United States

Key Capabilities:

- Identifies market barriers and expands the availability of trade financing
- Trade data and methodology to expand international sales and marketing
- Identifies of potential agents, distributors, and buyers

U.S. Department of Treasury (Treasury) — works directly with the ministries of finance, economy, and budget in target countries to advise on the macroeconomic dimensions of policy decisions, steps to improve the investment climate and financing options for infrastructure investments

Key Capabilities:

- Provides in-country expertise to partner governments in budget and financial accountability, government debt management and issuance, revenue policy and administration, and structuring of infrastructure investments and agreements
- Collaborates with the World Bank, African Development Bank, and International Monetary Fund to leverage policy advice, technical assistance, and lending programs to support government reform, development programs, and private investment

U.S. Department of Energy (DOE) — provides technical expertise to U.S. agencies and African governments to improve the efficiency and resilience of energy systems and reduce adverse environmental impact

Key Capabilities:

- Provides technical expertise supporting the development and modernization of grids in developing countries through both bilateral cooperation and multilateral initiatives, like the Clean Energy Ministerial
- Provides expertise in policy planning, energy market analysis, energy modeling, and technical analysis to incubate enabling environments that encourage private investment
- Undertakes assistance for regulatory reform (e.g., tariff design) by fostering relationships between applicable focus country agencies and U.S. regulators, including members of the National Association of Regulatory and Utility Commissioners
- Helps nurture innovative technologies developed by the DOE National Laboratories that enhance the economics of solar, wind, biomass and geothermal projects

U.S.African Development Foundation (USADF) — funds African enterprises, co-operatives and community-based organizations to build capacity and expand economic activities

Key Capabilities:

- Awards capacity building and expansion grants of up to \$250,000 to catalyze groups for future growth by funding technical, managerial and organizational improvements
- Provides due diligence research, project design and business planning, and monitoring and evaluation oversight
- In partnership with GE Africa, awards grants up to \$100,000 to African organizations for off-grid solutions that deploy renewable resources and stimulate economic activity

U.S. Department of Agriculture (USDA) — promotes sound policies and provides technical assistance to support national and international agriculture, energy, environmental and trade issues

Key Capabilities:

- Provides expertise in policy, regulatory and institutional capacity building, utility infrastructure, renewable energy and financing issues
- Provides capabilities in establishing community and business association ownership models and bid solicitation and proposal evaluation processes and standards
- Designs debt and equity financing mechanisms and develops performance based indicators

U.S.Army Corps of Engineers (USACE) — performs engineering services, consultations and oversight of infrastructure and energy projects in support of U.S. Government agencies, foreign governments and international organizations

Key Capabilities:

- Undertakes technical assistance and construction management for power generation projects, on a reimbursement basis
- Plans, designs, owns, operates and maintains hydro power facilities

POWER AFRICA

TECHNICAL ASSISTANCE

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Angola			
Solar Train the Trainer Program	Building local workforce knowledge on solar electric technology, utilization and development of off-grid networks.	Solar	Department of Energy
Democratic Republic of Congo			
Energy Governance and Capacity Initiative	Focusing on governance in the power sector, to benefit all projects, especially generation, transmission, and distribution concessions, mainly in regards to hydropower projects. Providing support to new independent regulatory agency and new rural electrification agency.	Hydro	US Agency for International Development
Sector Reform, Utility Turnaround and T&D Expansion	Due Diligence and Project Assessment	Power Sector	Millennium Challenge Corporation
Ethiopia			
Corbetti Geothermal Project	Assisting the Government of Ethiopia in negotiations associated with the development of the Corbetti Geothermal Project, including capacity building workshops for the benefit of the Ethiopian Electric Power company and relevant Ethiopian Government Agencies, including project finance, commercial agreements, reservoir appraisal and power interconnection issues.	Geothermal	US Agency for International Development
Transmission Planning and Capacity Development	Supporting Ethiopia's transmission and distribution company to build capacity to develop clean energy projects and manage intermittent renewable energy resources.	Gas, Wind, Solar, Hydro, Biomass	US Agency for International Development

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Ghana			
Eastern Transmission Line	Feasibility Study	Transmission	US Trade and Development Agency
Liquefied Natural Gas Unit	Reverse Trade Mission	Gas	US Trade and Development Agency
Electric Company of Ghana Change Management	Assisting Electric Company of Ghana develop and implement its change management program and improve performance.	Gas	US Agency for International Development
Energy Commission	Providing support and advice on gas pipeline and processing plant technical regulations and their enforcement.	Gas	US Agency for International Development
Ghana Gas Sector Action Plan	Embedded Advisor to Ghana Gas to help define a Gas Sector Action Plan to accelerate and consolidate the development of the Ghanaian gas sector.	Gas	US Agency for International Development
Ghana Smart Grid Applications	Feasibility Study	Smart Grid	US Trade and Development Agency
Aboadze-Domunli-Prestea Transmission Line	Feasibility Study	Gas	US Trade and Development Agency
Electric Company of Ghana and NEDCO Turaround Project	Feasibility Study	Power	Millennium Challenge Corporation
LNG Terminal	Feasibility Study	Gas	Millennium Challenge Corporation
Kenya			
Kenya Grid System Management	Supports the revision of the national grid code and building capacity of the Energy Regulatory Commission and Kenya Power and Lighting Company.	Wind, Solar, Hydro, Biomass, Geothermal	US Agency for International Development
Kenya Clean Energy Solutions	Assists the Government of Kenya in identifying, commercializing and bringing to scale innovative clean energy solutions with a focus on the direct use of geothermal energy for cutting-edge agricultural applications.	Geothermal	US Agency for International Development
Lesotho			
Lesotho Wind Power	Capacity building and transaction services for electricity company.	Wind	US Agency for International Development

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Liberia			
Energy Governance and Capacity Initiative	Provides support and capacity building to enhance Liberia's ability to manage oil and gas sector resources responsibly and transparently. Collaborating on the new draft petroleum law and its implementing regulations. Budget advisors assisting the Economic and Financial Analysis Unit within the President's Office. Providing support to Liberian National Oil Company on seismic data management.	Oil, Gas	State Department
Rural Energy Agency Expert	Developing five-year plan outlining how the Rural Energy Agency can effectively implement the World Bank's Scaling Up Renewable Energy Program.	Wind, Solar; Hydro, Geothermal	US Agency for International Development
Malawi			
Malawi Power Sector Opportunities	Reverse Trade Mission	Various renewable energy technologies	US Trade and Development Agency
Malawi Power Sector Reform Project	Providing wide variety of support on energy sector policy, reform, financial modeling, financial and operational management, management information systems, tariff and regulatory assistance, and procurement and performance audit.	Power Sector	Millennium Challenge Corporation
Namibia			
Namibia REFIT Program	Capacity building for the Electricity Control Board on REFIT	Wind, Solar, Biomass	US Agency for International Development
Nigeria			
Southwestern Nigeria Gas Pipeline	Feasibility Study	Gas	US Trade and Development Agency
Lagos State Compressed Natural Gas Infrastructure	Feasibility Study	Gas	US Trade and Development Agency

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
<i>Nigeria continued</i>			
Electricity Distribution Sector	Reverse Trade Mission	Smart Grid Technology	US Trade and Development Agency
Honeywell Group Flower Gate Gas Fired Independent Power Plant Project	Feasibility Study	Gas	US Trade and Development Agency
Royal Power & Energy Gas Fired Independent Power Plant	Feasibility Study	Gas	US Trade and Development Agency
<i>Sierra Leone</i>			
Energy Governance and Capacity Initiative	Provides support to the Sierra Leone Petroleum Directorate on data processing and analysis to establish the capacity to manage oil and gas sector resources responsibly and transparently.	Gas	State Department
<i>South Africa</i>			
Solafrica 100 MW Concentrated Solar Power Plant	Feasibility Study	Solar	US Trade and Development Agency
Western Cape Rooftop Solar Photovoltaic	Feasibility Study	Solar	US Trade and Development Agency
Ample Solar Concentrated Solar Power Plant	Feasibility Study	Solar	US Trade and Development Agency
Ekurhuleni Smart Metering	Feasibility Study	Smart Metering	US Trade and Development Agency
Ibhubesi Offshore Gas Subsurface Field Development Plan	Feasibility Study	Gas	US Trade and Development Agency

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Tanzania			
Energy Governance and Capacity Initiative	Providing support to the Ministry of Energy and Minerals, Tanzania Petroleum Development Corporation, and the Revenue Authority in an effort to establish Tanzania's capacity to manage oil and gas sector resources responsibly and transparently.	Oil, Gas	State Department
Kinyerezi III Gas Generation	Provides support for procurement processes.	Gas	US Agency for International Development
Dodoma University Solar Project	Study to evaluate the technical and financial feasibility of implementing photovoltaic installations that would displace diesel power generation and increase power supply to the university.	Solar	US Trade and Development Agency
Renewable Energy Feed-in-Tariff (REFIT)	Developing REFIT Programs for small hydro, wind, solar, and biomass projects in Tanzania and Zanzibar. Establishing cost reflective structures and PPA Guidelines.	Various renewable energy technologies	US Agency for International Development
Lukosi River	Feasibility Study that assesses the technical, financial and environmental feasibility of three run-of-the-river small hydro plants that would be sited in the Lukosi River basin in central Tanzania.	Hydro	US Trade and Development Agency
Sector Reform, TANESCO Turnaround and Access Expansion	Due Diligence and Project Assessment.	Power Sector	Millennium Challenge Corporation
Feed in Tariff Program	Developing a renewable energy feed in tariff program for small projects, principally the regulatory body, Energy and Water Utilities Authority, to set a transparent and predictable price at which electricity will be purchased from small projects.	Hydro, Wind, Solar, Biomass	US Agency for International Development
NextGen Solawazi	Feasibility Study	Solar	US Trade and Development Agency
Transmission Planning and Capacity Development	Strengthens the capacity of Tanzania's transmission and distribution company to develop and implement clean energy projects and manage intermittent renewable energy resources.	Wind, Solar, Hydro, Biomass	US Agency for International Development

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Uganda			
Energy Governance and Capacity Initiative	Provides support to Uganda Petroleum Exploration and Production Department on upstream, onshore oil and gas operations, regulation, and oversight.	Gas	State Department
East Africa Regional			
Regional Geothermal and Power Sector Transactions Advisor	Supports capacity development to prioritize, coordinate, and expedite the implementation of power projects.	Geothermal	US Agency for International Development
Capacity Building Activity	Strengthens the capacity of East Africa countries to develop their geothermal resources for power generation and direct use applications.	Geothermal	US Agency for International Development
Regional Power Trade Assistance	Support for regional clean energy power trade and the development of a regional power market.	Wind, Solar, Hydro, Biomass, Geothermal	US Agency for International Development
Transmission Planning and Capacity Development	Supports institutional capacity to develop and analyze transmission networks and generation needs. Improving national and regional electricity transmission planning to enhance energy security and reduce global carbon emissions through clean energy access to the regional network.	Wind, Solar, Hydro, Biomass, Geothermal	US Agency for International Development
Regional Power Trade Assistance	Enhances legal and technical regulatory frameworks to support regional power trade and clean energy development.	Gas, Wind, Solar, Hydro, Biomass, Geothermal	US Agency for International Development
Commercial Law Development Program (CLDP)	Supports the development of model legal frameworks for accelerating the implementation of renewable energy projects in East Africa. Model contracts will be used in technical assistance activities for independent power producer attorneys and government officials to explain benefits in achieving accelerated, fair, and effective power project and finance agreements. The consultation bring together regulators, utilities, DFIs, Commercial Banks and leading attorneys and other relevant stakeholders.	Wind, Solar, Hydro, Geothermal	US Department of Commerce, US Agency for International Development
Meerkat 18 MW Small Hydro	Feasibility Study	Hydro	US Trade and Development Agency

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
East Africa Regional <i>continued</i>			
Oorja Fuel Cell Applications	Telecom Feasibility Study	Methanol Fuel Cells	US Trade and Development Agency
Private Sector Solar Power	Reverse Trade Mission	Solar	US Trade and Development Agency
Renewable Energy Grid Integration	Reverse Trade Mission	Grid integration	US Trade and Development Agency
Expansion of Clean Energy Solutions Center	Expert policy assistance to countries around the world on advancing the use of energy efficiency, renewables and other clean energy technologies.	Various renewable energy technologies	Department of Energy
Sub-Saharan Africa Regional			
African Development Bank Africa Legal Support Facility	Provides legal advice supporting clean energy transactions across the continent.	Gas, Wind, Solar, Hydro, Biomass, Geothermal	US Agency for International Development
Professionals on Demand	Builds capacity of host-country governments to manage power pools.	Power Pools	Department of Energy, State Department
Economic Community of Western African States Regional Lighting Standards & Labeling Initiative	Developing a toolbox, as well as monitoring, evaluation, and enforcement mechanisms for cross border efficiency standards.	Various renewable energy technologies	Department of Energy
Clean Energy Solutions Center	“Ask an Expert” policy assistance to countries around the world on advancing the use of energy efficiency, renewables and other clean energy technologies. Also provides training and peer-to-peer learning forums, and a rich library of technical tools and publications	Various renewable energy, clean energy, and energy efficiency technologies	Department of Energy
Geothermal Capacity Building in the East African Rift Valley	Assists in the development of policy and regulatory frameworks to assure the safe and efficient development of geothermal resource potential in East Africa.	Geothermal	Department of Energy, US Agency for International Development

PROJECT NAME	PROJECT DESCRIPTION	TECHNOLOGY	FEDERAL AGENCY
Sub-Saharan Africa Regional <i>continued</i>			
Southern Africa Power Sector Reform and Development	Supporting development of an Independent Power Producer Framework, capacity building on investment and project management in Southern African power pool, and tariff publication and guidance on cost-reflective tariff design.	Power Sector	State Department
Commercial Law Development Program (CLDP)	Providing technical assistance for accelerating the development of power generation projects; developing an Annotated PPA and related tools for government officials to use to understand how best to allocate risks associated with complex projects and streamline negotiation processes.	Oil, Gas, Wind, Solar, Hydro, Geothermal	US Department of Commerce,
West Africa Regional			
Private Financing Advisory Network Support	Supporting regional clean energy efforts by providing a transaction advisor.	Gas, Wind, Solar, Hydro, Biomass	US Agency for International Development
Wind and Solar Mapping	Delivering a user-friendly database containing high-quality wind and solar resource data for country mapping and identification of potential project sites	Wind , Solar	US Agency for International Development
Commercial Law Development Program (CLDP)	Conduct consultations with West Africa countries focused on integrating international best practices and sharing regional experiences with the negotiation and development of independent power projects. The consultation bring together regulators, utilities, DFIs, Commercial Banks and leading attorneys and other relevant stakeholders.	Oil, Gas, Wind, Solar, Hydro, Geothermal	US Department of Commerce, US Agency for International Development

POLICY, REGULATORY AND GOVERNANCE OBJECTIVES

This table offers a snap shot of current priorities and ongoing activities. The policy-related work supported by *Power Africa* is tailored to the specifics of each country; this work will expand as required to support the enabling environment we seek to strengthen so that our work is sustainable, replicable, and scalable.

FOCUS COUNTRY	OBJECTIVES	PROGRESS TOWARD OBJECTIVES WITH POWER AFRICA SUPPORT
Ethiopia	Cost-Reflective Tariff	<ul style="list-style-type: none"> Gradual progress; facilitated by Corbetti Power Purchase Agreement, currently in negotiation, and the unbundling of Ethiopia Energy and Power Company.
	Feed-in Tariff for Geothermal and other Generation Sources	<ul style="list-style-type: none"> Feed-in Tariff proclamation in review with support from <i>Power Africa</i>
	Energy Sector Planning: Develop Geothermal Strategy	<ul style="list-style-type: none"> Ongoing analysis, coordinated with the 2nd Growth and Transformation Plan. USAID, International Finance Corporation World Bank Group and African Union Commission working with Government of Ethiopia on geothermal strategy.
	Enhance Institutional Capacities in Power Sector	<ul style="list-style-type: none"> Capacity development activities including demand side management and energy efficiency, legal and regulatory frameworks, natural resources, health and safety, environment, and fiscal management.
	Private Sector Investment	<ul style="list-style-type: none"> Developing partnership frameworks, and legal and regulatory frameworks for private sector investment.
Ghana	Power Sector Reform Strategy; Framework for Utility Performance	<ul style="list-style-type: none"> Progress toward Integrated Resource Planning and Master Plan, including investment requirements and identification of potential private sector partners. Draft Framework and Policy for Private Sector Participation for electricity distribution utilities submitted. Road Map for independent power producers supported by and coordinated with new MCC Compact. Technical assistance ongoing with Energy Commission, Public Utility Regulatory Commission, and Ghana Gas. Financial performance targets established for public utilities. Plan to pay Government's past due electricity bills submitted June 2014

FOCUS COUNTRY	OBJECTIVES	PROGRESS TOWARD OBJECTIVES WITH POWER AFRICA SUPPORT
Ghana <i>continued</i>	Technical and Financial Performance of Distribution Companies <ul style="list-style-type: none"> • Full Cost Recovery Tariff • Clear Arrears to Distribution Companies 	<ul style="list-style-type: none"> • Aggressive technical, commercial and collection (TC&C) loss reduction program continues to drive down losses. • Automatic quarterly tariff adjustments implemented in January and April 2014. • Electric Company of Ghana employing USAID's technical assistance in change management and human resource development. • MCC exploring options to support monitoring, data collection and analysis.
	Natural Gas Supply for Power <ul style="list-style-type: none"> • Infrastructure • Gas Action Plan • LNG Strategy • Natural gas pricing policy Rural & Universal Access <ul style="list-style-type: none"> • Grid expansion • SE4All momentum 	<ul style="list-style-type: none"> • Ghana Gas and Jubilee partners signed technical tie-in agreement. • Natural Gas Pricing Policy document published. • Gas Action Plan submitted June 2014 • Government has awarded a Gas Master Plan contract (February 2014) • First phase of MCC LNG feasibility study completed spring of 2014 • Technical assistance focused on domestic gas supply agreements; securitization, connection and transportation agreements; gas sales agreements.
		<ul style="list-style-type: none"> • African Legal Support Facility to support power generation companies and Renewable Energy Association on commercial negotiations. • U.S. Commerce Department's Commercial Law Development Program working with African government lawyers to develop annotated, standard PPA clauses to significantly reduce time required to negotiate power deals. • Technical assistance planned for technical, financial aspects of PPA negotiation.
	Off-taker Risk Mitigation	<ul style="list-style-type: none"> • Exploring credit enhancement schemes and options for off-taker risk mitigation. • Considering evolution from a single-buyer market to a wholesale market model.
	Cost Reflective Tariff and Credit Worthy Off-taker	<ul style="list-style-type: none"> • Plans in place to complete tariff review. • Regulatory commission affirmed the concept of cost-reflective tariffs. • Collaborating with <i>Power Africa</i> and World Bank Group to design policy and institutional arrangements for off-grid solutions.
	Finalize Energy Policy and Energy Bill of 2013	<ul style="list-style-type: none"> • Draft Energy Policy, Bill shared with donors and stakeholders; revision in process.
	Grid Code to Incorporate Renewables	<ul style="list-style-type: none"> • Grid Code revision expected by Q3, 2014 with USAID technical assistance.

FOCUS COUNTRY	OBJECTIVES	PROGRESS TOWARD OBJECTIVES WITH POWER AFRICA SUPPORT
Liberia	Enabling Legislation for Rural and Renewable Energy Agency & Electricity Sector	<ul style="list-style-type: none"> Legislation to authorize the Rural and Renewable Energy Agency has passed Liberia's Senate. It must be passed by the House as well and signed into law. Government of Liberia redrafted electricity legislation and is awaiting stakeholder feedback and introduction in the House and Senate. Redraft does not include independent electricity regulator; will require harmonization with current policy.
	Technically sound, commercially viable Liberian Electricity Corporation	<ul style="list-style-type: none"> Donor advisory group to review and advise on efforts to move Liberian Electricity Company beyond its current management contract due to expire in 2015. Plans for options analysis to provide basis for new management assistance either through contracts and/or technical assistance.
	Comprehensive Energy Sector Master Plan	<ul style="list-style-type: none"> Recently developed Least Cost Power Development Plan will be the basis for a comprehensive Electricity Sector Master Plan.
	Privatization Opportunities in Energy Sector	<ul style="list-style-type: none"> Working to improve enabling environment for private investments in the power sector; enhancing Liberia's participation in international energy trade exchanges.
	Capacity to Coordinate Energy Sector Modernization	<ul style="list-style-type: none"> Creating an Energy Secretariat within the Ministry of Lands, Mines, and Energy empowered to develop national energy strategic plans, coordinate efforts of public and private sector partners, manage reconstruction and expansion of Liberia's power system, and support high priority transactions.
Nigeria	Increased Domestic and International Capital Flow: <ul style="list-style-type: none"> Securitize National Bulk Electricity Trading (NBET) Investment Opportunities for Pension Funds Loan Portfolio Guarantees for Local Banks 	<ul style="list-style-type: none"> Sustainable business plans for NBET accepted by investors in legacy power plants, by the World Bank, and by AfDB as the basis for Partial Risk Guarantees. Nigeria Sovereign Investment Authority (NSIA) and Guarantco leading an initiative to facilitate private capital for investment in large-scale infrastructure through guarantees of long-term local currency debt issuance by private entities. Using best practices experience to provide guarantees to unlock pension and private sector funds for infrastructure projects. Conducting market assessment to advance \$50 million Capex facility to local banks to encourage lending.
	Tariff Reforms; Renewable Energy Feed-in Tariff	<ul style="list-style-type: none"> Nigeria Electricity Regulatory Commission (NERC) commenced analyses of submissions from DISCOS to validate Aggregate Commercial and Technical Losses and customer numbers; USAID-funded technical advisors supporting this process. NBET negotiating cost reflective tariff rates for large-scale renewable energy projects, including wind and solar transactions.
	Institutional Capacity to Support Privatization <ul style="list-style-type: none"> Establish Contract and Rule-based Transitional Electricity Market (TEM) 	<ul style="list-style-type: none"> NERC adopted revised "Rules for the Interim Period Between Completion of Privatization and the Start of the Transitional Electricity Market," (May 2014). Advisors working with Transmission Company of Nigeria (TCN) to develop framework for transmission project planning, funding, procurement and Public-Private Partnerships. Advisors are supporting TCN in request to NERC to change the tariff structure to a level that reflects costs and supports operations and growth.

FOCUS COUNTRY	OBJECTIVES	PROGRESS TOWARD OBJECTIVES WITH POWER AFRICA SUPPORT
Nigeria <i>continued</i>	Cost-reflective Gas to Power Pricing Framework	<ul style="list-style-type: none"> • <i>Power Africa</i> considering options to support strategy for natural gas availability for power generation, and to support efforts to incentive private investment.
Tanzania	Power Sector Reform Strategy: Framework for Utility Performance	<ul style="list-style-type: none"> • Electric Supply Industry (ESI) Reform Roadmap for the Tanzania mainland finalized, adopted and published: clarifies plans to unbundle generation from the state-owned utility, TANESCO • TANESCO, its Board of Directors, and its management under key performance indicators (KPIs) to enhance customer service and financial management • TANESCO implementing internal performance improvement plan, including restructuring around functional cost centers to improve financial transparency • Comprehensive utility turnaround plan in progress • Public subsidy policy in development
	Cost-reflective Tariff; Tariff Adjustments Reduce technical and commercial losses Public-Private Partnerships (PPP) to Increase Capacity	<ul style="list-style-type: none"> • Revised base tariff structure for January 2014 - December 2016 with mechanisms for quarterly adjustments. • Peak load studies completed, Time of Use (TOU) tariff structure in development • TANESCO Revenue Protection Unit strengthened to monitor meters effectively. • Continued expansion of Automatic Meter Reading focused on large customers. • TANESCO conducting energy audits and providing guidance on energy efficiency. • Renewable energy feed-in tariff structure in development; stakeholder consultations continue as part of this process.
	Regulatory Institutions Overcome Non-financial Barriers to Investment	<ul style="list-style-type: none"> • Review of 2003 National Energy Policy commenced; draft report submitted. • Natural Gas Policy adopted Q4 2013; Natural Gas Act in draft process. • TANESCO implementing plan to reduce arrears to contractors, service providers
	Improve Energy Sector Planning; Increased Capacity of Key Institutions	<ul style="list-style-type: none"> • Power System Master Plan updated April 2013; includes Big Results Now! • Gas Utilization Master Plan to be finalized after completion of Natural Gas Act. • Rural Electrification Investment Prospectus being finalized.
	Private Investment in Power	<ul style="list-style-type: none"> • PPP policy, act and regulations amended to enable PPP energy projects. • PPP Implementation Strategy and Operational Guidelines are being drafted. • Rural Electrification Prospectus will prioritize investment opportunities.



REFERENCES

- ¹ United Nations Environmental Programme. (2012). *Regional Report on Efficient Lighting in Sub-Saharan African Countries*. Retrieved from http://www.enlighten-initiative.org/portals/0/documents/country-support/en.lighten_Sub-Saharan%20Report.pdf
- ² World Bank. *Energy — The Facts* [Fact Sheet]. Retrieved from <http://go.worldbank.org/6ITD8WA1A0>
- ³ Sustainable Energy For All. (2012). *Sustainable Energy For All Overview — Global Tracking Framework* (Publication No. 77889 v2). Retrieved from <https://www.iea.org/media/freepublications/oneoff/GlobalTrackingFrameworkOverview.pdf>
- ⁴ Dr. Todd J. Moss (2014, February 27). *U.S. Policy and Tradeoffs in Promoting International Access to Energy*. Testimony before the House Energy and Commerce Committee Subcommittee on Energy and Power. Retrieved from <http://www.cgdev.org/sites/default/files/Advanced%20Copy%20-%20Moss%20Testimony%20-%20U%20S%20Policy%20and%20Tradeoffs%20in%20Promoting%20International%20Access%20to%20Energy.pdf>
- ⁵ Dr. Todd J. Moss (2014, February 27). *U.S. Policy and Tradeoffs in Promoting International Access to Energy*. Testimony before the House Energy and Commerce Committee Subcommittee on Energy and Power. Retrieved from <http://www.cgdev.org/sites/default/files/Advanced%20Copy%20-%20Moss%20Testimony%20-%20U%20S%20Policy%20and%20Tradeoffs%20in%20Promoting%20International%20Access%20to%20Energy.pdf>
- ⁶ International Energy Agency. *Access to electricity 2011* [statistics]. Available from IEA Energy Access Database.
- ⁷ Africa is now one of the world's fastest growing regions. *The Economist*. (2011, January 6). Retrieved from <http://www.economist.com/node/17853324>
- ⁸ International Monetary Fund. (2014, April). *Regional Economic Outlook Sub-Saharan Africa: Fostering Durable and Inclusive Growth*. Retrieved from <https://www.imf.org/external/pubs/ft/reo/2014/afr/eng/sreo0414.pdf>

⁹ African lives have already greatly improved over the past decade, says Oliver August. The next ten years will be even better. *The Economist*. (2013, March 2). Retrieved from <http://www.economist.com/news/special-report/21572377-african-lives-have-already-greatly-improved-over-past-decade-says-oliver-august>

¹⁰ U.S. Energy Information Administration. *Electrification rates 1990 to 2010* [statistics]. Available from EIA International Energy Statistics Database.

¹¹ Food and Agriculture Organization of the United Nations. (2011, March). *The Role of Women in Agriculture*. Retrieved from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>

¹² The White House Office of the Press Secretary. (2013, June 30). *Remarks by President Obama at the University of Cape Town*. Retrieved from <http://www.whitehouse.gov/the-press-office/2013/06/30/remarks-president-obama-university-cape-town>

¹³ International Renewable Energy Agency. (2013). *Africa's Renewable Energy Future: The Path to Sustainable Growth*. Retrieved from http://www.irena.org/DocumentDownloads/Publications/Africa_renewable_future.pdf

¹⁴ United Nations Environment Programme. (2012). *Overview of Geothermal Resource Exploration and Development in the East African Rift System*. Nairobi, Kenya: Meseret Teklemariam Zemedkun. Retrieved from <http://www.os.is/gogn/unu-gtp-sc/UNU-GTP-SC-15-1102.pdf>

¹⁵ The White House Office of the Press Secretary. (2013, June 30). *Power Africa* [Fact Sheet]. Retrieved from <http://www.whitehouse.gov/the-press-office/2013/06/30/fact-sheet-power-africa>

¹⁶ KPMG Africa Limited. (2013). *Oil and Gas in Africa: Africa's Reserves, Potential, and Prospects*. Retrieved from <https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/Documents/Oil%20and%20Gas%20in%20Africa.pdf>

¹⁷ *How to Measure Natural Gas*. Retrieved from American Gas Association website <http://www.aga.org/KC/ABOUTNATURALGAS/ADDITIONAL/Pages/HowtoMeasureNaturalGas.aspx>

¹⁸ International Energy Agency. (2011). *Energy For All: Financing Access for the Poor*. Paris, France. Retrieved from http://www.iea.org/media/weowebiste/energydevelopment/weo2011_energy_for_all.pdf

¹⁹ U.S. Energy Information Administration. (2013, December 30). *Nigeria* [Fact Sheet]. Retrieved from <http://www.eia.gov/countries/cab.cfm?fips=ni>

POWER AFRICA

POINTS OF CONTACT

Andrew Herscowitz

Coordinator, *Power Africa*

Email: powerafrica@usaid.gov

Shannon N. Cazeau

Power Africa Country Team Leader, Ethiopia

Email: cazeausn@state.gov

Keith Simmons

Power Africa Country Team Leader, Liberia

Email: ksimmons@usaid.gov

Paul Taylor

Power Africa Country Team Leader, Ghana

Email: paul.taylor@trade.gov

Mark Carrato

Power Africa Country Team Leader, Kenya

Email: mcarrato@usaid.gov

Peter Argo

Power Africa Country Team Leader, Nigeria

Email: pargo@usaid.gov

Daniel Moore

Power Africa Country Team Leader, Tanzania

Email: dmoore@usaid.gov

www.usaid.gov/powerafrica

