Senate Foreign Relations Committee
Africa Subcommittee

Hearing on "Powering Africa's Future: Examining the Power Africa Initiative"
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Mr. Chairman, Ranking Member Flake, and Members of the Subcommittee – thank you for the opportunity to testify today on the Power Africa Initiative. I am Del Renigar, Senior Counsel for Global Government Affairs and Policy, for General Electric.

As you know, sub-Saharan Africa is home to tremendous people and tremendous resources. Yet, sub-Saharan Africa is mired in energy poverty:

- Sub-Saharan Africa accounts for only 12% of the global population, but almost 45% of those are without basic access to electricity.
- Nearly seven out of every ten Africans still have no access to what we would consider modern electricity.
- 90 million sub-Saharan children have no electricity at school.
- 70% of businesses cite the lack of access to reliable power as a major constraint.
- 225 million sub-Saharans rely on health facilities that are without electricity.

At GE, we believe that power has the potential to transform lives and communities and bring economic growth to every corner of the globe, especially sub-Saharan Africa. Through our presence in sub-Saharan Africa, we directly witness how the continent's power deficit impacts every element of daily life and work, with pronounced impacts in education, public health, medical care and business productivity. We are enthusiastic partners with the US Government in launching and implementing the Power Africa Initiative, which we see as a new framework for public-private collaboration to address some of the world's most intractable challenges.

Background

GE is the world's largest infrastructure company. We bring the best people and the best technologies to take on the toughest challenges, finding solutions in energy, health and home, transportation and finance. GE has been actively involved in Africa for well over a century. The Company established the South African General Electric Company in 1898, and has been a reliable partner to African nations and communities since that time. We now have more than 1,800 employees working across 35 countries in the region, providing solutions and services that support Africa's infrastructure and sustainable growth.

We have a strong foundation for serving as a partner to the US Government (USG) in implementing the Power Africa Initiative. Several GE business units contribute to serving Africa's energy needs, but the principal technology and service provider for Power Africa is GE's Power & Water business, which provides customers with a broad array of power generation, energy delivery and water process technologies to solve their challenges locally. Power & Water works across the spectrum of fuel

sources, including renewable resources such as wind and solar; biogas and alternative fuels; natural gas; coal; oil and nuclear energy. Headquartered in Schenectady, NY, Power & Water is GE's largest industrial business.

Power Africa Initiative

GE is one of the founding private sector partners for the Power Africa Initiative. At the project announcement in June 2013, we committed to help bring online 5,000 megawatts of new electric generation capacity, in cooperation with the Initiative's government and other private sector partners. We are proud to join these partners in alleviating sub-Saharan Africa's most significant development challenge and laying the foundation for Africa's economies to prosper and the health, well-being, safety and productivity of its people to flourish.

One of the important strengths of Power Africa is that it brings a whole-of-government approach and focuses it on a single metric: doubling access to power in sub-Saharan Africa. In pursuing that goal, Power Africa has the potential to address some of the long-standing policy and regulatory bottlenecks to solving Africa's power problem. It also provides a unique opportunity to support Africa in developing new energy resources that provide an unparalleled opportunity to accelerate access to power—including natural gas and renewables. By operating at the policy level, Power Africa can enable the development of a clear framework to incentivize investment in sustainable power for the long term. By operating at the transactional level, Power Africa can help get deals done. The obstacles in developing and executing these energy projects are complex and multi-faceted, ranging from securing financing to obtaining regulatory approval to negotiating with local utilities and off-takers. The coordinated, interagency nature of Power Africa provides the type of cross-cutting support that enables power projects to move forward.

Power Africa's on-the-ground coordination out of Nairobi and its placement of embedded in-country advisors in the African ministries complements the "whole-of-government" approach. This lends a strong, local perspective and understanding to the administration of the Initiative and enhances the awareness and capabilities of the local ministries combined with domain and process expertise in Washington.

Because the GE Africa team is able to meet regularly with the on-the-ground USG team and share information in real time with interagency partners, we can all act quickly from multiple angles on multiple fronts to keep projects on track. For example, the GE, USG and Kenyan Government teams were activated in a matter of hours on both sides of the ocean when Kenya considered tariffs that would have increased the cost of wind projects.

GE Projects and Investments

GE is pursuing a range of projects and technologies to support its commitment to the Power Africa Initiative. Local needs vary drastically across and even within the Power Africa countries, and each requires a solution tailored to that context. We are using expertise across the full spectrum of fuel sources, including natural gas, wind, and other renewables like biogas, to meet these needs in a way

that is suitable in each context. Grid capacity and connectivity is a huge challenge in many parts of the region, and we are also supporting a portfolio of grid-based and off-grid solutions with our specialized expertise in distributed power. While many projects are still in various stages of planning, financing and implementation, I would like to highlight several major accomplishments below:

Natural Gas

One of our most significant efforts to date has been focused on the privatization of the Nigerian power sector. This effort is focused on improving performance at existing generation and distribution assets, and adding additional capacity going forward. Power Africa's advisors in Nigeria have supported capacity building in the Nigeria power sector, including through advising on power privatization in the Bureau of Public Enterprises. As independent and neutral advisors, the Power Africa advisors have worked with the Nigerian authorities to develop the Power Purchase Agreement (PPA) for the Nigeria Bulk Electricity Trader (NBET). This included an innovative put/call structure that helped to enhance the creditworthiness of the NBET as the final off-taker and provide developers with recourse in the event of default. If adopted, this will provide a model for PPAs in Nigeria and reduce the obstacles to concluding negotiations on power generation projects. Indeed, innovative ways of enhancing off-taker credit should be explored throughout the other Power Africa countries as well.

We have also made significant progress in developing gas power projects in Tanzania, where we expect to bring the Kinyerezi-Tanesco 150 megawatt project on line this year. Ghana also offers the opportunity to bring significant new power on line with the development of major gas-fired power projects. In particular, the Ghana 1000 project aims to bring on line 1000 megawatts of power over the next six years. In June of last year, GE signed an MOU with the Ghanaian Government and established a consortium of companies to fast track fuel availability through the global LNG supply and to create options for gas capacity to support other projects.

Power Africa, working along with the Millennium Challenge Corporation (MCC), has the opportunity to support the transformation of Ghana's power sector by supporting LNG infrastructure. We also believe that Ex-Im and OPIC are potential sources of financing for the projects. If MCC, Ex-Im, OPIC and the other Power Africa agencies were to engage across the entire value chain of the Ghana 1000 project including fuel supply, infrastructure, incentives and execution, then Power Africa could demonstrate an ability to support end-to-end development of innovative, large-scale energy sector transformations.

Wind

We are actively supporting the Kenyan Government's objective to increase the country's power capacity by an additional 5,000 megawatts. We are involved in two major wind projects, including supplying turbines to the 60 megawatt Kinangop Wind Project, which reached financial close in late 2013. The project is scheduled to start construction this year. We also expect to see significant progress this year on the Kipeto Wind Project, which would ultimately produce an additional 100 megawatts.

We also see significant wind opportunities in Ethiopia.

Off-Grid Energy Challenge

At GE, innovation is at the heart of everything we do, and solutions that drive progress should be elevated and taken seriously—no matter where they come from. African innovators and entrepreneurs are developing new technologies to tackle the continent's energy deficit, and we are determined to lend scale and resources to these transformative ideas that have the potential to solve this challenge. We recently announced the first round of winners of the Power Africa Off-Grid Energy Challenge, which we are sponsoring in conjunction with the US African Development Foundation. We solicited the best ideas from African entrepreneurs and innovators designing innovative off-grid energy solutions that deploy renewable resources and support local economic activity. Winners from Kenya and Nigeria designed innovative projects including solar-powered water points, stand-alone cold storage facilities, urban bio-digesters and solar mini-grids. We are looking forward to expanding the program over the coming years.

Institutionalizing Progress

Mr. Chairman, we applaud your focus on ensuring that the Power Africa Initiative is institutionalized and continues to achieve important gains for decades to come. We agree wholeheartedly, and we believe there are systematic, structural improvements that would ensure the durability and longevity of the initiative. We also encourage ongoing Congressional support for key USG activities that facilitate power projects as a component of broader foreign policy, security, environment and development objectives in the developing world that stress strong private sector participation.

Power Africa Reforms

Our most significant challenges continue to be in three key areas: speed of contracting and financial close; transforming abundant gas resources to power generation; and financing – particularly credit enhancement for off-takers. While Power Africa transaction advisors are doing a good job of advancing individual transactions, we see cross-cutting opportunities to get projects across the finish line more quickly and efficiently. These opportunities include:

- **Support effective contracting structures:** We constantly face a challenge in navigating contracting structures in a way that provides confidence to financing partners. We believe that the Nigeria PPA can serve as a potential model for other power generation projects in the region. We suggest that Power Africa consider standardizing documentation for IPPs and support credit enhancement for off-takers, with a view toward medium-term creditworthiness. This could significantly speed project implementation. We understand that USAID and the Commerce Department's Commercial Law Development Program are convening private sector experts to develop model templates that can be replicated and banked quickly for projects across sub-Saharan Africa. We support this initiative and believe it can play an important role in facilitating and streamlining the project development process.
- **Establish framework for gas-to-power:** The mismatch between gas resources and power deficits is one of the most frustrating aspects of working in Africa. This structural issue is orders of magnitude larger and more challenging than any individual project in Nigeria or Tanzania. We

recommend that the Power Africa Initiative create a comprehensive framework to promote gas-to-power in the region, which would examine infrastructure needs for gas networks, gas pricing and allocation, implications for power tariffs and support for alternative solutions that enable power to be provided in remote locations.

- **Assess grid capacity:** Grid capacity limitations currently act as a constraint to bringing on additional power in many countries. As we make long-term plans for power generation solutions, we recommend that Power Africa undertake a review of grid needs to absorb higher capacity and efficiency equipment. This will facilitate effective planning that matches the most appropriate power resource technology with localized needs and capabilities. This analysis is particularly important as countries introduce a range of generation sources (including renewables, gas, etc.), which produces some instability and requires more sophisticated grid management technology and planning.
- **Facilitate biogas projects:** We see significant potential for biogas-based power generation projects in Africa. These distributed power systems offer win-win solutions for rural communities – they improve waste management practices, avoid greenhouse gas emissions and meet near-term energy needs. While several existing programs support biogas projects, current efforts tend to be one-off, opportunistic solutions. Larger projects still face significant hurdles in achieving commercial viability. We suggest that Power Africa explore more systematic options for reducing costs of project feasibility, in order to enable more significant investments in biogas projects in the region. In particular, we believe that Ethiopia and Tanzania are rich environments for biogas and should be the focus of feasibility studies and pilot projects. Power Africa should examine, for example, whether the USTDA- and OPIC-supported US-Africa Clean Energy Finance Initiative could be a useful tool here.

Congressional Support

Coupled with these programmatic efforts and ongoing oversight, we encourage Congress to continue to support, expand and improve the core federal programs that enable US companies to meet the needs of foreign markets. At GE, nearly 60% of our revenues derive from markets abroad – up from 40% just a decade ago – which sustain our domestic manufacturing base. Much of our opportunity for future growth lies in these expanding markets.

We support reauthorizing the Overseas Private Investment Corporation (OPIC) and the Export-Import Bank (Ex-Im), and we encourage Congress to seek improvements to make both institutions more flexible and user-friendly, and to use the full range of their tools and authorities. Similarly, it is important to ensure that the US Agency for International Development (USAID) has sufficient funding and flexibility to use its delegated credit authority to work with companies on projects. We also support efforts led by several members of this Committee to ensure sufficient Commerce Department resources for commercial, advocacy and market intelligence support in sub-Saharan Africa.

In addition, we have been working closely with this Committee and your counterparts in the House on the Electrify Africa Act. We believe that the legislation is an important component of a long-term strategy to institutionalize the Power Africa Initiative. We appreciate your commitment to this

legislation, and we look forward to continuing to work with you and your staff as a bill is introduced and advanced here in the Senate.

I would like to address one specific issue we have raised as part of the Electrify Africa Act discussion. Until the passage of the FY14 omnibus, the OPIC carbon cap effectively precluded OPIC activity in support of US participation in much of the global energy sector (with the exception of renewable energy projects). Without access to OPIC financing, some projects were delayed or canceled outright, while others were awarded to foreign entities that were able to obtain financing from OPIC-like institutions abroad.

The carbon cap policy hurt US manufacturers of power generation equipment, limited US foreign policy objectives in key regions, constrained the private sector's ability to invest and hampered the developing world's ability to grow and obtain access to basic services, such as electricity. We believe that OPIC can help to meet the urgent demand for increased generation in low income countries while preserving the integrity of US environmental objectives. The omnibus, which temporarily lifted the carbon cap under certain circumstances, was a step in the right direction. We encourage this Committee to consider modifying OPIC's carbon policy on a more permanent basis to enable limited financing and support for power projects for the world's poorest countries.

Conclusion

Thank you for the opportunity to share GE's perspective on the Power Africa Initiative. We believe this coordinated, whole-of-government approach offers an innovative and effective mechanism for working with the private sector to address the energy deficit in sub-Saharan Africa. We have seen important successes to date, and we look forward to continuing to work with Initiative leaders to drive even more significant impacts going forward. I appreciate this Committee's attention to this critically important Initiative, and I am happy to answer any questions you may have. Thank you.