

Senate Foreign Relations Committee
Subcommittee on Africa and Global Health Policy
Hearing on “The U.S.-Africa Leaders Summit Seven Months Later: Progress and Setbacks”
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Mr. Chairman, Ranking Member Markey, and Members of the Subcommittee – thank you for the opportunity to testify today on the U.S.-Africa Leaders Summit and the related issue of energy access in Africa. I am Del Renigar, Senior Counsel for Global Government Affairs and Policy, for General Electric.

GE in Africa

GE has a rich history in Africa that spans more than 100 years. GE’s capability and global expertise in the power generation, healthcare, rail transportation, water, oil and gas, and aviation sectors allow us to play a significant role in the development of the continent. We now have more than 2,350 employees across more than 25 countries in the region, providing solutions that support Africa’s infrastructure and sustainable growth and increasing US investment and trade with the region.

In addition to the power generation portfolio which I will discuss momentarily, GE provides leading technology and services for the exploration and production of oil and gas, freight locomotives and aircraft engines, and imaging and diagnostic solutions for hospitals and clinics. From Transnet in South Africa to Ethiopian Airlines to hospitals in Kenya, to power projects in Nigeria and oil companies across the continent, Africa is home to some of GE’s best customers and most important deals.

U.S.-Africa Leaders Summit

Africa has been GE’s fastest-growing region since 2000. But lasting growth, both for the continent and for companies that invest there, depends on sustaining investment and fostering partnerships on both sides of the Atlantic. To this end, when President Obama hosted over 40 African heads of state in Washington, D.C., for the first-ever [U.S.-Africa Leaders Summit](#), GE sought to maximize this unprecedented gathering of public and private stakeholders.

With more than 30 GE leaders in town for the week-long event, GE teams across three regions (U.S., Sub-Saharan Africa, and North Africa) partnered to host six major events, including a thought leadership conference with *The Economist* called Africa Ascending; orchestrated 100+ bilateral meetings with leaders; and announced more than \$2 billion in facility development, skills training, and sustainability initiatives across Africa by 2018. Our investment will be focused in three strategic areas: building infrastructure, delivering localized solutions to customers, and capacity building. Some of the specific new deliverables include:

- Supplying small, distributed gas turbines in Algeria and Nigeria to increase grid reliability;
- Updating and expanding a “Company-to-Country” agreement with Nigeria to support infrastructure projects and the transfer of skills and technology;
- Providing approximately \$1 billion in railway and power equipment to Angola;
- Providing approximately \$1 billion in rail equipment to South Africa
- Providing approximately \$500 million in aircraft engines to Ethiopian Airlines;
- Supporting scholarship programs in Angola and Mozambique;

- Enabling leadership training, technical support, and access to capital for young entrepreneurs as a part of the Young Africa Leaders Initiative (YALI);
- Partnering with the Bush Institute on its Pink Ribbon Red Ribbon initiative, which provides technical assistance and capacity building related to cancer and HIV/AIDS; and
- Investing \$20 million over the next five years in health programs across Africa through the GE Foundation to train nurse anesthetists and biomedical equipment technicians.

GE's engagement continues beyond the conclusion of the event itself. In response to an Executive Order signed at the Summit, Commerce Secretary Pritzker established the President's Advisory Council on Doing Business in Africa to advise the President on strategies for strengthening commercial engagement. Jay Ireland, President and CEO of GE Africa, is honored to serve on the Council, and GE is playing an active role in informing the Council's recommendations on trade and investment, particularly related to infrastructure.

Increasing energy access in the region

GE believes there is profound opportunity in Africa and that US companies should be aggressively engaging and investing in the Continent now to be part of its long term growth. At the same time, however, there are challenges. Power inefficiencies cost the region \$3.2 billion annually in lost productivity, while consumption is only one-tenth of that found elsewhere in the developing world. This means that it takes an Ethiopian two years to consume the amount of energy an American or European uses in a matter of days. Without reliable and affordable power, Africa's growth will be constrained, entrepreneurs and small and medium enterprises will not be able to grow, and health care and education will be unable to meet the needs of a rapidly growing population.

African countries can build sustained and inclusive economic growth by increasing access to reliable and affordable power, and many African companies are taking steps to do just that. [Afrisol Energy](#), a four-year-old Kenyan company, is looking to turn waste into fuel to power Nairobi's slums and rural neighborhoods. The bio-digesters it is developing will both alleviate sanitation problems and generate electricity to allow school children to read after dusk or enable clinics to refrigerate vaccines.

Afrisol's work is symbolic of the inventiveness and entrepreneurial spirit that drive people to overcome structural barriers and unlock growth potential. The company was one of the winners of an innovation challenge launched by GE, USAID and the US-Africa Development Foundation that awarded funding to businesses working to bring sustainable, renewable energy technologies to underserved markets. Afrisol was one of more than 150 entries, a fact that illustrates how many African companies are innovating to solve the region's challenges.

Last fall, GE and our partners awarded grants to four Nigerian companies that are working to develop localized biogas facilities, biomass power generation plants, a solar-powered micro grid, and a solar maize-mill processing facility. Eighteen other innovators from Kenya, Ethiopia, Tanzania, Liberia and Ghana also received \$100,000 grants to scale up projects providing renewable solutions to energy challenges in communities outside the national grid.

At GE, we believe these and other distributed power systems can help address the power needs of Africa. Distributed power technologies are small power systems typically ranging in size from 100 kW to 100 MW and located at or near the point of use. The current suite of distributed power technologies often includes natural gas and diesel-powered reciprocating engines, small gas turbines, fuel cells, solar panels and wind turbines.

Africa has a unique set of conditions that make distributed power technologies particularly attractive. Distributed power is critical to increasing electrification rates in these areas and providing basic services to these populations.

To be clear, even though the drivers for distributed power are strong today, Africa will still need centralized power and large-scale gas and power grids to accommodate a variety of fuels. Increasing urbanization and the need to capture economies of scale for cities and industrial centers will drive need for central power stations. In our view, the scalability and flexibility of distributed power will complement rather than fully displace centralized power development.

Gas to Power

Power is essential to Africa's continued growth, and new energy discoveries are making it possible to address the huge needs of the region. Gas is poised to capture a larger share of the world's energy needs. World gas demand could reach approximately 4,600 BCM by 2025, which is 32 percent higher than today. Regional gas markets are expanding. A global network is developing rapidly, but to capture the efficiency and environmental benefits relative to other hydrocarbons, infrastructure development needs to accelerate, particularly in Africa. Gas will be an attractive alternative to oil in transportation and other distributed energy settings as new supplies are brought online. Further, as regional economies grow, Africa will increasingly look to supply its own agricultural and industrial needs as well as export gas.

Gas-to-power initiatives are a way to make power available to people who need it. Despite the region's gaping power deficit, it is endowed with over 400 trillion cubic feet (Tcf) of gas reserves. Nigeria in particular has among the largest gas reserves in the world (180 Tcf). Tanzania is another example where analysts estimate recent gas finds totaling 25 to 30 Tcf of recoverable resources. These resources have the potential to bring electricity to the 82% of the country's population currently without reliable power while transforming Tanzania into a natural gas exporter. Bringing these stranded assets "online" will help meet the urgent demand for electricity and provide an alternative to diesel in low-income countries.

In sub-Saharan Africa, GE sees a tremendous opportunity to work with a broad set of partners to enable reliable, domestic power through gas-to-power projects. The basic concept behind GE's gas-to-power initiative entails convening stakeholders – including governments, developers, fuel suppliers, equipment providers and financiers – to craft a workable, holistic approach to identifying and delivering gas resources to add new power generation capacity where it is needed and makes economic sense. Local needs vary drastically across and even within countries, and each requires a solution tailored to that context.

One of the greatest benefits of these systems is their scalability. The gas-to-power solution can serve distributed power needs as well as those of larger cities or regions. Systems can be designed to address the challenges and demands of specific customers or geographies.

Take Ghana as an example. Since 2012, the country has faced power shortages caused by inadequate and unreliable gas supplies to run power plants. GE is working with a set of partners to develop Ghana 1000, sub-Saharan Africa's largest integrated gas to power project. The project consists of a floating storage and regasification unit (FSRU), possibly first in-service for Sub-Sahara Africa, and related infrastructure for the import and domestic use of liquefied natural gas (LNG). The LNG will be used to power a 1300MW combined cycle power plant, located in Aboadze in the Western Region of Ghana. Beyond the scope of the project itself, the FSRU will have additional capacity to allow other power generators to shift from liquid fuels to LNG for power generation.

This project offers significant economic and environmental benefits. LNG can potentially lower the cost of power in Ghana by up to 35%, reducing energy costs by \$1 billion annually. Reliable power supplies and LNG imports will drive significant new economic activity, both within Ghana and elsewhere in the region. By shifting up to 3GW of thermal capacity from light crude oil to cleaner natural gas, the project will significantly reduce emissions and deliver associated health and environmental benefits.

At the same time, GE has also made a significant commitment to training and capacity building in Ghana. In partnership with Ashesi University College, GE is helping develop an academic curriculum to train students in skills needed to thrive in the country's growing energy sector. GE is also providing four-year scholarships to 100 engineering students in Ghanaian universities and vocational institutions. We believe these investments will help build the workforce needed to ensure and oversee the sustained success of Ghana's energy economy.

When it is complete, the Ghana 1000 project will be a signature accomplishment of the Power Africa Initiative. We are currently working with USAID, OPIC, Ex-Im, and the MCC to ensure a clear federal commitment to the success of the project. Efforts at this scale require a whole-of-government approach, which is embodied in the goals and objectives of Power Africa.

The Opportunities and Challenges in Nigeria

Another key region with huge gas-to-power potential is Nigeria. It is the largest country in Africa and accounts for 47% of West Africa's total population, yet less than half of its 179 million people have access to electricity and only 20% in rural areas. Despite the fact that Nigeria is the largest oil exporter in Africa and has the largest natural gas reserves in the continent, electricity scarcity is severely constraining economic growth and development.

One of the challenges in the power sector is an under developed domestic gas network and under-investment in gas production. Despite large gas reserves and byproduct gas from its oil production, low fixed prices for gas do not sufficiently incentivize companies to capture this resource. Instead they re-inject the gas to boost oil production or flare it off. Key elements of the Gas Master Plan in Nigeria are advancing and could help – including price adjustments and key infrastructure – but the process has been painfully slow.

In August 2013, Nigeria announced the largest power sector privatization in the world, breaking up the large national power company, selling off of generation assets to private investors, and separating transmission and distribution into separate operating companies. These efforts are starting to yield positive benefits and are attracting foreign and domestic investments in the power sector. Investors and developers, however, are concerned that a number of key representations by the Nigerian government have not yet been met, specifically the assurance of the gas allocation for the projects and elements of the government support agreements that are essential for investors taking risk in these new private companies.

For example, the Azura project, a 450 MW gas-fired power plant located in Edo State, Nigeria had been seen as the model for integrated power projects (IPP), however the Nigerian government has cast doubt as to whether the structure used for Azura will remain the same for new greenfield investments.

As a result of these recent setbacks, we believe the market in Nigeria has slowed and that investors are watching developments to assess the feasibility of the projects and level of Nigerian government support. Fresh engagement by the US government to convene investors, developers, and Nigerian government partners is needed to encourage continued reforms.

Federal Policy Opportunities

The barriers to powering communities and cities across the continent are increasingly becoming less physical, but more procedural. While there is increasing private investment in energy projects in Africa, there is a continued need for active government involvement to keep these significant public-private partnerships on track. We consistently require government engagement in the details, to keep projects on track through implementation and execution. There is an ongoing government role to help solve issues relating to how to agree to contracts more efficiently, how to properly price gas once it is brought to market, and most especially, how to finance energy projects.

It is critical that our customers have access to competitive financing to support these sorts of deals. 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.

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 derives from markets abroad – up from 40% just a decade ago. Much of our opportunity for future growth lies in these expanding markets, and these sales sustain our significant domestic manufacturing base, including thousands of jobs in research, design, engineering, assembly and services.

Conclusion

Thank you for the opportunity to share GE's experiences in sub-Saharan Africa. The 2014 U.S.-Africa Leaders Summit helped to further strengthen diplomatic and economic ties between governments and business leaders from both sides. We are having meaningful conversations about sustainable growth models, improving standards of living, reducing wealth disparity, and improving access to energy. Governments, companies and the confluence of public and private capital are all part of an equation in which the whole can be greater than the sum of the parts.

Building on the outcomes of the Summit, we look forward to continuing to work with this Committee and our partners to support the U.S. government's ongoing efforts to power economic growth and advance prosperity across the continent. I am happy to answer any questions you may have. Thank you.