2 July 2014

MEMORANDUM FOR RECORD

FROM: The Center for Technology and National Security Policy

SUBJECT: Summary of Forum on *“Power Africa- The U.S. Government’s innovative private sector led approach”*

On 25 June 2014, the forum on *“Power Africa- The U.S. Government’s innovative private sector led approach,”* hosted by the Center for Technology and National Security Policy’s (CTNSP) TIDES[[1]](#footnote-1) Project, brought together representatives from the energy sector, government officials, private citizens, as well as technology developers and practitioners. Participants convened to discuss low-cost, easily deployable alternative technology solutions that could help the President’s Power Africa Initiative to achieve the International Energy Agency’s goal of obtaining $300 billion in investment to realize universal electricity access by 2030. The event consisted of a 2.5 hour session held at the National Defense University (NDU). The forum included keynote speakers from the DOD and the United States Agency for International Development (USAID) along with a panel of speakers.

Dr. Linton Wells II, former director of CTNSP, provided the welcome address acknowledging the important relationship between CTNSP and the Power Africa Initiative. He discussed TIDES, which aims to provide solutions that work for local populations, fitting into their world and utilizing their resources, just as Power Africa aims to do. Collaboration and building partnerships to undertake projects is an important element of both TIDES and Power Africa in effectively providing humanitarian relief.

**KEYNOTE SPEAKERS**

Mr. Elmer Roman, Oversight Executive for Building Partnerships, Office of the Assistant Secretary of Defense, Research and Engineering (OASD(RE)) was the DOD keynote speaker. Mr. Roman discussed power and energy generation as well as the ability to connect the DOD with the “right” organizations. He stressed the importance of whole-of-government approaches to build security and stability by helping others to help themselves. He highlighted a number of DOD initiatives currently underway. These initiatives included:

* The 2011 DOD Operational Energy Strategy[[2]](#footnote-2) provides guidance about how to better utilize energy resources. It also focuses on energy demands in order to ensure that the Armed Forces have the necessary resources by attempting to reduce military operational demand for energy, to expand and secure operational energy supply, and to build energy security for the future.
* The DOD Energy Policy addresses renewable energy sources and alternative fuels. Energy is an essential resource and is critical for the development of military capabilities moving forward. New, viable, renewable sources of energy are essential to the further development of emerging regions. Accordingly, innovative sources of energy generation must be developed.
* The Miniature Deployment Assistance Kits (MiDAs) are another example of technology aimed at aiding stressed populations. The kits provide water purification, reliable and renewable power, and interoperable global communications to approximately 1,000 people. They are tools for maximizing command and control as well as situational awareness capabilities. They are intended for groups without access to rapidly deployable, low-cost, lightweight resources in order to enable effective whole-of-government response in partner countries. Much work has been done with energy generation in the Americas, focusing on solar, wind, water, and biomass resources.

Mr. Roman concluded by identifying several challenges. One challenge concerns the way in which to continue utilizing the concept of renewable energy sources in order to promote security cooperation and the removal of restrictions. Another regards the manner in which to encourage public-private partnerships and the utilization of military innovation for civilian applications, as it is important to emphasize integration among partners and to leverage initiatives.

Mr. Donald Niss, Deputy Coordinator for President Barack Obama’s 2013 Power Africa and Trade Africa initiative based at the USAID also served as a keynote speaker. He described the initiative as a new model for development driven by the private sector, which is critical for sustainability. Currently, 600 million people in sub-Saharan Africa are without electricity. The project seeks to ensure that partner countries strengthen their power sectors and attract investment, trying to accelerate the efforts already taking place within the region. Partner African countries include Ethiopia, Ghana, Kenya, Liberia, Nigeria, and Tanzania. Twelve United States Government agencies are involved as well, including the U.S. Department of State, the U.S. Department of Energy, and the U.S. African Development Foundation.

The initiative seeks to add over 10,000 megawatts (MW) of electricity generational capacity and renewable technology to partner countries by 2020; increase energy access to 20 million new households and commercial entities; enhance energy resource management capabilities of partner countries; and facilitate regional cross border energy trade for at least ten countries.

The project’s approach is to leverage a wide range of U.S. Government tools to support investment in Africa’s energy sector. The United States has committed over $7 billion in financial support over the next five years and has provided coordinated support to its African partners. It has fostered partnerships with multi and bilateral agencies, such as the African Development Bank, the World Bank, and the European Union. More than 35 private sector partners are committing $15 billion to Power Africa projects.

Since July 2013, there have been 2,786 MW worth of transactions, representing almost 28% of the 10,000 MW goal and commitments have been secured for another 5,000 MW. There have been a variety of projects resulting from the Power Africa initiative. Support was provided to the Ethiopian government in its negotiation of critical agreements to enable the harnessing of geothermal power. Another project in Ethiopia resulted in the production of two million smart meters. In Kenya, support was given to a 300 MW wind project. Small hydro projects in partner countries have also received support.

“Beyond the grid” initiatives are taking place as well. Off-grid and mini-grid efforts within the public and private sectors are being supported and scaled up in order to realize rural electrification. An off-grid challenge contest has been managed by the U.S. African Development Foundation (USADF) in partnership with General Electric. According to Mr. Niss the coordination of partnerships is vital, as Power Africa is represented as a whole-of-government project that requires agencies’ awareness of each other’s tools.

**PANEL PRESENTATIONS**

The panel session, “Building Capacity for Project Delivery,” addressed how the participants’ organizations could help African countries develop newly-discovered resources responsibly and expand the reach of mini-grid and off-grid solutions. In addition, participants were asked to address the ways in which their organizations can help deliver transformative solutions while creating long term value and sustainability in Africa. Panelists included Mr. Scott Sklar of The Stella Group, Colonel Bob Charette of Nishati, Ms. Michelle Lacourciere of Sirona Cares Foundation, and Mr. Gabino Guerengomba of Integrated Solar Technologies.

Mr. Scott Sklar, President and Founder of a clean energy technology optimization and strategic policy firm called The Stella Group, Ltd., was the first of the panelists to present. He emphasized the blending of clean energy technologies and financing for projects. South Africa, Kenya, and Morocco are among the African nations increasing their renewable energy projects, following a global trend. The incentives to do so are power reliability, power quality, and to off-set uniquely high rates. Numerous private sector actors are involved in the firm’s projects. New tools include solar energy siting software, ethanol cooking stoves, solar-driven water systems, and biomass gasifiers. Importantly, Mr. Sklar emphasized that energy itself should be thought of as a tool. Finally, training is crucial to the effective utilization of these resources.

Colonel Bob Charette USMC (ret.), the Chief Executive Officer of Nishati, Inc., was the second panel speaker. He maintained that access to energy is a national security and development issue, as a lack of access to the modern world results in frustration for many people. He highlighted important lessons learned from attempting to build partnership capacity in Afghanistan. The mission of the Nawa Energy Project was to provide economic opportunities and technology training to the local people. The concept of operations was to provide power to the local bizarre by enabling merchants to purchase electricity with pre-paid cards. A self-sustaining power plant was established in which all equipment was operated and maintained by local Afghans. The equipment was installed at the District Governor’s house for security. The system consisted of a 30 kilowatt (kW) solar array and 144 kW hours of battery backup. In Col. Charette’s opinion, the lessons that were (re)learned as a result of this project were that there must be local ownership and support. Training and support must be in accordance with local capacity.

Ms. Michelle Lacourciere, Founding Director and Chief Executive Officer of Sirona Cares Foundation, continued the panel and addressed building sustainable communities. Energy solutions for off-grid populations must be radically affordable, high impact, hyper scalable, robust, and sustainable. Sirona’s Ti Soley solar program in Haiti brings light to 1,000 people per day at the cost of one penny per person per day. Ti Soley kits are rented to homes and consist of one battery, light-emitting diode (LED) lights and bases, one USB port and two DC ports, a flashlight, and a durable case. They can be recharged at 1.5 kW solar charging stations that require one hour set-up by a team of two. The kits provide life-changing energy access, which impacts a person’s health, income, and environment and allows for self-sufficiency, empowerment, and opportunity. Sirona provides assessment, equipment, training, and tools.

Mr. Gabino Guerengomba, the final panel speaker, is the Chairman and Chief Technology Officer of Integrated Solar Technologies (IST). ISTs answer the need for more sources of sustainable energy and are part of the attempt to eliminate the necessity of the power grid in African countries. Mr. Guerengomba discussed Very Small Aperture (VSAT) terminals, which are modular solar power systems with broadband capabilities. They reduce cost and increase speed, serving up to 250 users per baseband station over a 30 mile radius. The Hybrid Solar Module connects off-grid consumers, is flexible to scale, is sustainable, eliminates the need for large area panels through alternatives, and reduces reliance on high-capacity, long-duration lithium-ion batteries. The advantages of ISTs are that they provide 24/7 solar energy coverage and are priced competitively. Furthermore, gallium arsenide (GaAs)-based modules can be used in ways that silicon cannot. ISTs eliminate the need for power plants to make a difference. They also target markets with huge demand and untapped potential. Moreover, their footprint is relatively small despite their considerable impact. Finally, they are sustainable for communities with limited technologies and access to education and as such they are tailored for off-grid application.

**PANEL Q&A**

The forum concluded with a question and answer portion. Upon request, Mr. Niss identified the goals of Power Africa as increasing generation capacity, moving beyond the grid, promoting sustainability by creating an environment to bring in investment, and enabling partner countries to own the future of their power structures. One participant noted that the challenge is about more than delivering power in the form of kWs, but is also about the provision of energy services. Another observed that grid solutions create problems, such as security, and that off-grid solutions are preferable. The speakers’ response was that the projects are working to balance both types of power solutions and that the transactions being facilitated should be utilized as tools for identifying challenges and bringing about changes in the overall system. The absence of francophone countries was pointed out by an audience member, who asked if Power Africa had any intentions to move beyond its six current partner nations. In response, Mr. Niss stated that the project is looking at the region as a whole and must evaluate resources before making any plans to expand. Finally, the importance of information sharing within USAID and among all involved groups was recognized.

1. TIDES = Transformative Innovation for Development and Emergency Support. This research project is coordinated at the Center for Technology and National Security Policy (CTNSP) at the National Defense University (NDU), which is part of the Department of Defense. TIDES is part of a broader project called STAR (Sharing to Accelerate Research). All information on the website is free, open-source, and in the public domain. Ideas expressed, or products displayed, on the website, or in other TIDES or STAR-TIDES activities, should not be considered as endorsed by anyone else; including the US government, nor should they be considered any form of commitment. [↑](#footnote-ref-1)
2. <http://energy.defense.gov/Portals/25/Documents/Reports/20110614_Operational_Energy_Strategy.pdf> [↑](#footnote-ref-2)