

Impacts of Our Expert
Policy Assistance

Africa

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Section 1: Regional Impacts:

African Nations

1. Building Capacity for Africa and Pacific Islands

On-site expert assistance was provided in collaboration with the International Renewable Energy Agency (IRENA) for Small Island States and African Nations at the Japan-IRENA training program on *Setting Renewable Energy Targets*. The training focused on the policy aspect of designing and implementing optimal renewable energy targets. Assistance focused on the design of tariff-based support policies, such as feed-in tariffs and auctions, and financing options for these policies. The audience consisted of policymakers in the renewable energy sector from Africa and the Pacific Islands.

Impact of Assistance

This training afforded policymakers the opportunity to learn good practices on how to design policies and programs that are compatible with renewable energy target-setting objectives, including affordable prices, grid stability requirements, and design elements from an investor perspective. As a result of the support provided at the workshop, policymakers have the tools to design successful policy responses to market fluctuations, and regulators have enhanced capacity to evaluate laws, adapt tariffs as needed, and benchmark best practices for renewable integration.

COMMENT FROM REQUESTOR

"The feedback from trainees was excellent, indicating the high quality of lectures. In particular, the Solutions Center contribution was very well received and added significant value to the discussions, which was reiterated by the trainees." – Gauri Singh, Director, Country Support and Partnerships, IRENA

2. Supporting African Governments' Rural Energy Policies

The Clean Energy Solutions Center supported government stakeholders from multiple countries throughout Africa through virtual trainings to the members of the African Association for Rural Electrification (CLUB-ER). A total of four webinar trainings were held—

two in French and two in English. Each webinar featured a Solutions Center expert who presented on one of the following topics:

- Planning for energy access
- Quality standards in rural electrification
- Rural electrification policy and strategies
- Forecasting electricity demand in rural Africa

The webinar trainings were also recorded and made available to members for reference.

Impact of Assistance

Solutions Center assistance to CLUB-ER will help build capacity among its members, many of whom work in government energy-related ministries. The capacity building will support them in successfully implementing rural energy and energy access policies.

West African Countries

1. Catalyzing Gender Equality-Focused Clean Energy Development in West Africa

2. Developing Renewable Energy and Energy Efficiency Action Plans for West African Countries

The Clean Energy Solutions Center provided on-site support during a workshop held in Abidjan, Cote D'Ivoire. The workshop was focused on helping representatives from the 15 member states of the Economic Community of West African States (ECOWAS) develop their national renewable energy action plans (NREAP) and their national energy efficiency action plans (NEEAP). The participants, who included senior regulatory and government officials from each of the ECOWAS countries, were provided with detailed insight into how to establish national renewable energy targets and how to



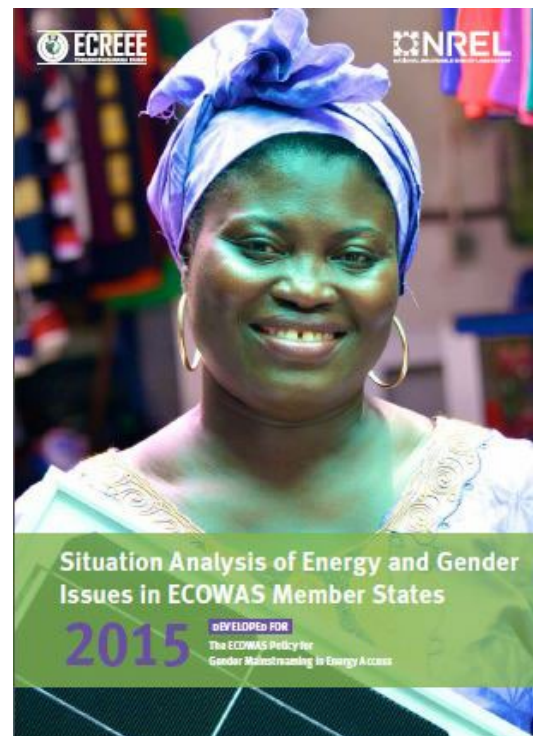
design NREAPs and NEEAPs. A portion of the workshop focused on gathering baseline data and on the various methodologies available to gather, organize and integrate data into a successful clean energy strategy. Solutions Center [experts](#) informed the attendees on good practices for renewable energy and energy efficiency policies.

Impact of Assistance

The assistance provided will facilitate the development of effective and successful renewable energy and energy efficiency action plans that will allow ECOWAS countries to meet the energy targets defined in the ECOWAS regional energy policy, foster the deployment of clean energy technologies and provide clean energy access to remote populations.

3. Adopting Gender-Responsive Development Strategies in West Africa

The Clean Energy Solutions Center supported the development of a new report titled [*Situation Analysis of Energy and Gender Issues: Issues in ECOWAS Member States*](#). The report was developed in partnership with the Economic Community of West African States (ECOWAS) Centre for Renewable Energy and Energy Efficiency (ECREEE). According to the report, women in the region continue to be outside the decision-making sphere and their human rights are often compromised when addressing energy access issues. The study also reveals that although women will be disproportionately more affected by climate change, they possess relatively limited influence on key decisions related to climate change mitigation and adaptation.



Impact of Assistance

The report lays the groundwork for the development of the ECOWAS Policy for Gender Mainstreaming in Energy Access, providing insights on how ECOWAS member states can adopt gender-responsive development strategies to achieve the objectives of the Sustainable Energy for All (SE4ALL) initiative and the Sustainable Development Goals (SDGs). The launch of the report comes at a time when the UNFCCC is advocating for gender equality as a necessary step to more effectively combat climate change.

4. Helping Develop a Gender Assessment Directive in West Africa

The Clean Energy Solutions Center partnered with the Economic Community of West African States (ECOWAS) Center for Renewable Energy and Energy Efficiency, Sullivan and Cromwell LLC and the U.S. Agency for International Development's Power Africa program to develop the Directive on Gender Assessments in Energy Projects. This directive provides a legal framework for the 15 ECOWAS member states to implement actions established in the



ECOWAS Gender Mainstreaming in Energy Access policy. This Directive is designed to assure that stakeholders in the energy sector conduct gender assessments in the planning and execution phases of energy infrastructure projects. Prior to drafting the Directive, Solutions Center experts conducted research to understand the needs of the region. This research led to a background study titled Developing a Legal Instrument for Gender Assessment in Energy Infrastructure Planning and Development within ECOWAS. This study analyzed gender-related issues associated with energy infrastructure development and the existing energy regulatory framework in the ECOWAS region. This study laid the groundwork for creating and adopting the legal instrument for conducting gender

assessments of energy infrastructure projects. The Directive was validated by all 15 Member States on June 28, 2017, following a three-day workshop in Accra, Ghana.

Impact of Assistance

Considering gender equality and inclusivity when planning and implementing energy infrastructure projects will help the ECOWAS region create more job opportunities for local populations in the energy sector and potentially achieve significant economic growth and energy security in the region.

Section 2: Country-Specific Impacts

Chad

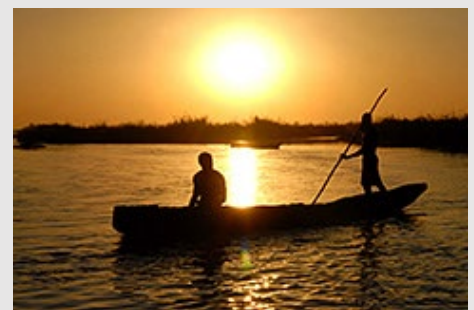
1. Helping Increase Access to Clean Energy in Remote Regions

To help the Government of Chad determine the best way to approach rural electrification, the Clean Energy Solutions Center provided an analysis of different electrification technologies for remote and non-interconnected regions of the country.

In addition to detailing solar PV, wind, biogas and biomass technology options and costs, the Solutions Center report offered specific examples from countries around the world to illustrate the different models of deployment that have been used to increase adoption of these technologies in remote areas. The Solutions Center analysis also provided an overview of four different business models for rural electrification: two financed primarily by the end user and two financed primarily by the government or by donors. The report outlines the various advantages and disadvantages of each business model to assist the government of Chad in developing better policy and improve energy access in the country.

Impact of Assistance

The analysis and information provided by the Clean Energy Solutions Center will enable the Government of Chad to increase access to clean, low-carbon, and sustainable electricity sources across the country.



COMMENT FROM REQUESTER

I testify to everyone my gratitude for the work done by the Clean Energy Solutions Center. Already with the English version, I could see the substance, and therefore the importance, of the report. I will now share the French version with my Minister. — Bianpambe Patallet, Project Coordinator for the Global Climate Change Alliance in Chad

Ghana

1. Establishing Feed-In Tariffs

The Clean Energy Solutions Center is assisting the Ghana Energy Commission with the design and development of a feed-in tariff (FIT) policy. Ghana is in the early stages of creating such a policy and requested assistance from [Solutions Center experts](#) in identifying best practices for FIT policy design. Solutions Center experts provided resources on FIT design, including best practices. The Solutions Center is current engaged in consultations with the Ghana Energy Commission to provide additional guidance and support for the FIT policy.



Impact of Assistance

The Solutions Center is collaborating with Ghana in the early stages of the FIT policy design. As such, this early support will facilitate both effectiveness and speed of policy development and eventual implementation that will encourage scaled-up deployment of renewable energy into the Ghana energy mix.

Kenya

1. Informing Kisumu County, Kenya, on Energy Access and Health Correlations

The Kisumu County government requested assistance in identifying the status of household energy access in Kisumu County. In particular, the county wanted to explore the relation of energy access and the health sector. Solutions Center [experts](#) conducted a literature review and subsequent analysis of the information provided in a report.



Impact of Assistance

Through the information provided in the Solutions Center’s response, Kisumu County’s community health workers gained a deeper understanding of the current sources of household energy for cooking and lighting, the reliability of these energy sources, and the impact of these sources on local health. With this information, they were able to understand the current energy access situation and develop a more appropriate countywide energy strategy.

Mauritius

1. Ensuring Sustainable and Viable Utility Services

The Clean Energy Solutions Center supported the Mauritius Ministry of Energy and Public Utilities with development of a Utility Regulatory Authority roadmap designed to ensure the sustainability and viability of utility services, protect the interests of both existing and future customers, promote efficiency in both operations and capital investments with respect to utility services and promote competition to prevent unfair and anti-competitive practices in the utility services industry. To assure a comprehensive design of an effective roadmap, recommendations were made on topics such as cost of service regulation, integrated planning, financial analysis, tariff structure and analysis, competitive procurement, project evaluation and negotiation, licensing, renewables integration and consumer protection. The Solutions Center also provided observations on a proposed phased action plan.



Impact of Assistance

Solutions Center assistance will help the regulator to successfully offer reliable electricity service at a reasonable cost while meeting societal goals and balancing the interests of the utility investors, energy consumers and the economy.

2. Mapping Utility Services Sustainability and Viability in Mauritius

The Clean Energy Solutions Center supported the Mauritius Ministry of Energy and Public Utilities with developing a Utility Regulatory Authority roadmap. The roadmap is designed to ensure the sustainability and viability of utility services, protect the interests of both existing and future customers, promote efficiency in both operations and capital investments with respect to utility services and promote competition to prevent unfair and anti-competitive practices in the utility services industry. To assure a comprehensive design of an effective roadmap, the Solutions Center provided recommendations on topics such as cost of service regulation, integrated planning, financial analysis, tariff structure and analysis, competitive procurement, project evaluation and negotiation, licensing, renewables integration and consumer protection. The Solutions Center team also provided observations on a proposed phased action plan.



Impact of Assistance

Solutions Center assistance will help the regulator in Mauritius successfully offer reliable electricity service at a reasonable cost while meeting societal goals and balancing the interests of the utility investors, energy consumers and the economy.

3. Strengthening and Accelerating Growth of the Solar Water Heating Sector in Mauritius and Seychelles

In response to separate requests for assistance from the republics of Mauritius and Seychelles, the Clean Energy Solutions Center worked with the International Renewable Energy Agency (IRENA) through the Renewable Energy Policy Advice Network (REPAN) to conduct solar water heating market studies for both countries. The studies were designed to support efforts by Mauritius and Seychelles to develop, strengthen, and accelerate the growth of the solar water



Solutions Center assistance will help Mauritius and Seychelles achieve greater solar water heating market penetration. Shown here: City of Port Louis, Mauritius

heating (SWH) sector. Small island development states like Mauritius and Seychelles face unique energy challenges, as costly fossil fuel imports burden their national budgets and inhibit investment in socio-economic development. Indigenous renewable energy resources such as solar can reduce import dependence, while creating important local business and employment opportunities. Solar water heating systems can be highly cost effective in island settings with high fuel prices.

To benchmark and evaluate solar water heating markets in both countries, REPAN experts used the Solar Water Heating TechScope Market Readiness Assessment methodology, which was developed under the Global Solar Water Heating Market Transformation and Strengthening Initiative—a joint undertaking by the United Nations Environment Programme and the United Nations Development Program. The goal of the initiative is to develop, strengthen and accelerate the growth of the solar water heating sector.

The Mauritius study indicated that the country's solar water heating market is strong, with average annual growth of 40% over the past five years and 25 percent of households equipped with solar water heaters. Mauritius has also laid much of the non-financial groundwork needed to continue developing the solar water heating market, including government-led public awareness campaigns, installer quality requirements, and incentive

schemes to jumpstart early-stage market growth. The country also enjoys an increasing number of available financing mechanisms and a high degree of public awareness.

Unlike Mauritius, Seychelles is almost entirely dependent on imported fossil fuels. The Solar Water Heating TechScope Market Readiness Assessment for Seychelles indicated an average growth in the country's solar thermal market of about 17% annually over the last five years, along with a strong loan program available to households for purchasing energy efficiency and renewable energy equipment, including home appliances, solar PV, and solar water heating.

Impact of Assistance

Information provided by the Solutions Center's solar water heating assessments for Mauritius and Seychelles will help the countries' decision makers develop strategies to expand solar water heating markets, reduce dependence on imported fossil fuels, and create important local business and employment opportunities.

By establishing solar water heating market targets, financial incentives for system installation, building mandates and outreach campaigns, Seychelles can achieve greater solar water heating market penetration.

By establishing solar water heating policies and incentives and continuing to build its solar water heating standards and certification infrastructure, the country can achieve much greater solar water heating market penetration.

Namibia

1. Advancing Renewable Energy and Energy Efficiency Programs

The Clean Energy Solutions Center is assisting the Renewable Energy and Energy Efficiency Institute (REEEI) with developing a concentrating solar power (CSP) program, a building certification and rating program, and an appliance standards and labeling program. [Solutions Center policy experts](#) from the Collaborative Labeling & Appliance Standards Program (CLASP), the World Green Building Council, the Mexico Green Building Council, the National Renewable Energy Laboratory (NREL), and the European Solar Thermal Electricity Association (ESTELA) are consulting with REEEI on a range of effective policy designs covering the three program areas.

Impact of Assistance

The potential impact of the assistance provided is based on Namibia having the right tools and information to proceed with constructing a concentrated solar power plant accompanied by strong policies to support developing a CSP program throughout Namibia. Additionally, Solutions Center assistance will support design and development of an effective appliance labeling program, and implementing a "Green Building Council" building certification and rating program. These programs will facilitate integration of energy efficiency and renewable energy technologies across a range of applications including new construction, and major renovation building projects.

TESTIMONIAL



"The CEM Initiative has been very helpful to us in Namibia by being a great networking hub. They have connected us with experts such as CLASP in our endeavor to establish an appliance labeling and standards development program. They have also connected us to different green building council experts who in turn are assisting Namibia in establishing its own green building council. The CEM Initiative is assisting Namibia in its renewable energy resources assessment." – Kudakwashe Ndhulukula, Coordinator at Renewable Energy & Energy Efficiency Institute

Senegal

1. Clean Energy Solutions Center Analysis Informs Government of Senegal's Pathway to 10 MW of Distributed Clean Energy

With rapid electricity demand growth and a power system that is heavily reliant on oil, diversifying the electricity mix to support development of a more competitive power sector has long been a priority for the Government of Senegal. Its recent Law and Decree related to a pilot program targeting 10 megawatts (MW) of distributed clean energy envisions a range of clean energy technologies, including biogas and wind power, with a focus on rooftop solar photovoltaics (PV).

To advance this vision, the government sought technical assistance from the Clean Energy Solutions Center, through the U.S. Leadership Compact, on analysis of policy and regulatory frameworks to inform the development of a NET-FIT model. Adopting this model enables customers to use self-produced energy on-site while offering them a regulated rate at which the utility can purchase net excess generation. By implementing this policy, the government aims to lower electricity rates and boost the competitiveness of Senegal's commercial and small business sectors.

High-Impact Activities

Working closely with the Commission de Régulation du Secteur de l'Electricité (CRSE), the Solutions Center provided analytic and technical information to inform the design of key components of a framework for distributed PV, including:

- A regulatory bulletin setting out the policy
- Administrative and regulatory procedures

TESTIMONIAL

"The independent, expert support the Clean Energy Solutions Center provided enabled the regulatory commission to identify the necessary steps to implement the tariffs. As such, it helped lay the first milestone toward the NET-FIT policy in Senegal."

– Alexandre Tidiane Bodian,
Expert Economist, CRSE

- The final tariff table outlining the proposed purchase tariffs for the net excess generation from distributed clean energy projects under 1 MW
- A presentation outlining the process, methodology, tariff table, and administrative aspects of the policy for stakeholder consultation
- Supporting documentation for establishing a national website for the program.

Key Takeaways

Along with making it possible for CRSE to identify the necessary steps to implement the tariffs, the Solutions Center's support enabled CRSE to draw up and submit draft power purchase agreements for public consultation and establish Terms of Reference to support its supervision of the pilot phase of the program to purchase surplus renewable energy. Key Société Nationale d'Électricité du Sénégal (SENELEC) officials responsible for implementing the policy were engaged throughout the project to build knowledge and capacity at the electric utility.

Another key project component was helping to establish transparent administrative procedures enabling citizens and local businesses to invest in the electricity sector. Opening the power sector to a wider range of participants will help mobilize investment, increase competition, and boost energy security.

After the utility finalized its internal procedures for launching the program, the Government of Senegal launched its NET-FIT policy in October 2018. Along with serving to scale up distributed solar power in Senegal, the policy will be critical in helping unlock financing for the country's renewable energy sector and could emerge as a replicable model for other countries to follow (see "[Senegal launches Breakthrough Policy for Solar PV](#)", Toby Couture, LinkedIn Pulse).

Project Impacts

This project directly supports the Government of Senegal's plans to scale up clean energy investment in the country by:

- Improving local capacity at SENELEC (the national electricity utility), the regulatory authority, and the Ministry of Oil and Renewable Energy
- Broadening awareness of policies and programs across the United States and around the world

- Preparing stakeholders within the Ministry of Oil and Renewable Energy to effectively design and develop the NET-FIT policy
- Helping mobilize foreign investment while encouraging more domestic innovation and economic activity in the electricity sector
- Informing the establishment of transparent administrative procedures enabling citizens and local businesses to invest in the electricity sector.

South Africa

1. Creating Commercial Building Efficiency Regulation

In November 2013, the South African Government passed a regulation designed to promote energy efficiency in commercial buildings. And, thanks to advice from the Clean Energy Solutions Center Ask an Expert service, this regulation has a good chance of succeeding.



Barry Bredenkamp, senior manager at the South African National Energy Development Institute (SANEDI), reached out to the Solutions Center for help with a draft of the regulation, which is part of the South African National Energy Efficiency Strategy to improve energy efficiency by 15 percent in the commercial sector. The regulation:

- Provides tax incentives for businesses that can demonstrate measurable energy savings
- Includes tax incentives for all energy efficiency projects that reduce energy use
- Offers tax incentives for savings in all energy forms, not only electricity, which can be claimed until 2020
- Specifies the process for determining the amount of energy savings achieved through efficiency measures.

“SANEDI had a terrific start on an energy policy and good intentions for expanding efficiency in their commercial sector,” said Terri Walters, an international energy policy expert who provides consulting to countries through the Ask an Expert service. “I helped them think through the wording of their policy to see how it might affect their ability to

administer the program. After working with them to make some mid-course corrections, their legislation has enough flexibility to give them a better chance of success.”

According to Walters, who has worked for more than 20 years in clean energy policy, legislative language can often have unintended consequences. Once language is set in a law or regulation, it can be very difficult to change.

“Any incentive policy walks a fine line between burden and incentive,” she said. “You want the incentive to be high enough to make it worthwhile for participants, but you need enough eligibility and reporting requirements to ensure that the program reaches its goals and does not waste taxpayer funds. In a new market, a policy can benefit from having flexibility to find the right balance.”

Over email and telephone conversations with Bredenkamp, Walters offered advice on modeling options for the program to quantify energy savings, provided best practices for setting incentive levels and program targets, reviewed draft regulation language and provided comments on policy design.

“The assistance the Ask an Expert service provided us has proved invaluable to our work,” said Bredenkamp. “Many thanks for all your help in making this a reality.”

Like other experts who participate in the no-cost Ask an Expert service, Walters has extensive experience in developing clean energy policy—and she passes on the benefits of her experience to countries that request assistance.

“My job when working with countries through the Ask an Expert service is to help them craft language and design a program that gives them the best chance of success,” she said. “I’ve seen a wide range of clean energy policies over the years. While no two policies or markets are the same, I try to use my experience to help countries avoid common mistakes and benefit from others’ trial and error.”

2. Enabling Energy Efficiency in South Africa’s Commercial Buildings

Swaziland

1. Advancing Clean Energy Solutions in Swaziland

Through its Ask an Expert assistance program, the Clean Energy Solutions Center responded to a request for assistance from the Swaziland Energy Regulatory Authority (SERA). Working with the [Clean Energy Regulators Initiative](#) (CERI), a Solutions Center expert provided critical analysis of a solar project application in Swaziland. This application represented the first of its kind for Swaziland, which had never before approved an application for solar technology.

The Solutions Center expert reviewed the regulatory issues associated with the license application for a 100-MW PV independent power station in the Kingdom of Swaziland from a company seeking to interconnect with the Swaziland Electricity Company. The project—proposed for development on a farm site south of Manzini—will have an impact on the reliability of the country’s electric utility system, as well as long-term consequences for the cost of electricity in Swaziland, for years to come.

The expert’s analysis identified significant risks presented by the project to Swaziland ratepayers, as well as concerns for system reliability and challenges for system integration if not adequately addressed in the context of project licensing.

Impact of Assistance

The guidance provided by the Solutions Center to SERA helped form the building blocks for an effective process that will establish a sound framework in Swaziland for future clean energy project development.

COMMENT FROM REQUESTOR



“SERA wishes to thank the Solutions Center for the invaluable support you provided. The report will continue to guide the regulator since the review is still ongoing. It shall also be used as a reference and guide for future applications and developments that will take place in the sector. Such include the ongoing development of an Integrated Resource Plan, which requires the Authority to establish a framework for soliciting renewable power as recommended in the review report.” —Mzwandile R. Msibi, Compliance Monitoring Officer, Swaziland Energy Regulatory Authority

Upon receiving the report, SERA investigated all issues raised and implemented several recommendations. With the assistance of the Solutions Center report, SERA:

- Requested the applicant conduct system impact and compensation studies
- Requested revised financial statements and cash projections throughout the plant's validity period
- Reviewed the applicant's Swaziland Electricity Company power purchase agreement with an emphasis on pricing
- Established conditions that the applicant will have to satisfy before receiving a license, such as:
 - Securing approvals from government institutions and authorities that deal with environmental and water issues raised in the report
 - Handling penalties in the event another party defaults
 - Establishing connection and wheeling agreements
 - Achieving compliance with the recently adopted grid code
 - Conducting network simulations.

2. Supporting Clean Energy Development in Swaziland

Tanzania

1. Enabling Energy Access Through Mini-Grid Financing in

Tanzania

The Clean Energy Solutions Center provided an overview of results-based finance to the Helios Social Enterprise, which received governmental grant support to progress mini-grids in Tanzania. The World Bank estimates that achieving universal electricity access will require additional investments of USD 900 billion between 2010 and 2030. More than 60% of that investment is expected to be needed in sub-Saharan Africa alone, which translates into a clear need to scale up public and private finance. One increasingly widespread tool to increase access and mobilize private finance is known as "results-based finance," which links grants to predetermined and verified results.

Well-designed results-based finance initiatives typically aim to meet three key requirements:

1. Provide a carefully calibrated level of support, based on current technology and deployment costs, as well as the national or regional context
2. Time-bound to avoid a long-term dependence on the funding available
3. Well-targeted to avoid the crowding out of private sector-led projects, or business models that are mature enough to scale up without incentives.

Results-based finance can be a powerful mechanism to broaden the base of citizens who are able to afford electrification while enabling a more rapid scale-up in the jurisdictions targeted. This Solutions Center analysis provides an overview of a few such initiatives underway across sub-Saharan Africa, with a focus on Rwanda, Kenya, Mali, Benin and Ghana.

Impact of Assistance

The information provided to Tanzania on results-based financing will contribute to the advancement of mini-grids by building capacity to develop and implement this powerful mechanism for affordable electrification.

Togo

1. Helping Togo Develop a Framework to Support Off-Grid Electrification

The Clean Energy Solutions Center, with funding from USAID's Power Africa initiative, provided technical assistance to the government of Togo's Regulatory Authority for the Electricity Sector (ARSE), on the development of a regulatory and legal framework to support off-grid electrification in the country. The Government of Togo is interested in developing a bankable regulatory framework both for mini-grids and for solar home systems to attract greater private sector investment to the sector. A range of options were reviewed, including the PAYGO model for solar home systems, which relies on available funding in lieu of financing.

Impact of Assistance

The project has resulted in significant progress on outlining the key policy and regulatory measures for the off-grid sector in Togo. Progress is underway to simplify and improve the customs process for importing solar and other renewable energy products in the country via the establishment of a registry of “certified importers” that would be granted special exemptions and accelerated processing for importing solar and other renewable energy products into the country. Currently, Togo’s government is initiating a PAYGO finance model and has awarded a contract to a solar system manufacturer to achieve an installation target of 300,000 solar home systems by 2022.

Section 3: Additional Assistance Provided

- The Solutions Center provided a review of **Botswana's** Country Action Agenda, which offers a long-term strategic vision designed to achieve Sustainable Energy for All objectives.
- **Burkina Faso** requested assistance with implementing a regulation for integrating clean energy into its electricity sector, as well as capacity building to develop operational frameworks for regulators.
- The Solutions Center provided **Cameroon** assistance with solar PV grid integration, clean cook stove programs and biogas programs.
- The Solutions Center helped **Cote d'Ivoire** develop a bioenergy strategy and a renewable energy strategic plan to support its roadmap for a green economy.
- The Solutions Center worked with the **Economic Community of West African States** (ECOWAS) Center for Renewable Energy and Energy Efficiency (ECREEE); providing support to the West Africa Clean Cooking Alliance by helping with the design and development of clean cooking action plans for 11 ECOWAS countries. Additionally, the Solutions Center provided expertise on mini-grid policies and a quality assurance framework during an ECREEE-sponsored workshop.
- The Solutions Center provided **Ethiopia** information on how a renewable portfolio standard (RPS) might interact with the country's current and pending energy policies. The Solutions Center also provided information on establishing renewable

energy targets and goals as the RPS is extended to government rural electrification and energy access efforts for remote populations.

- Country representatives from **The Gambia** attended a Solutions Center/International Renewable Energy Agency capacity-building workshop that convened South Pacific Island and African nations.
- The Solutions Center supported the **Kenya** Industrial Research & Development Institute by reviewing and providing analysis of Kenya's existing renewable energy policies.
- The Solutions Center provided information to **Mali** on solar photovoltaic and battery waste programs.
- The Clean Energy Solutions Center worked with **Mauritius** to write a chapter on gender and energy for the *Mauritius Long-Term Energy Strategy 2017–2030*. This chapter will be included in the updated Mauritius Energy Strategy.
- The Solutions Center provided consultation to **Morocco** on policy development with a focus on financing clean energy projects.
- Country representatives from **Mozambique** attended a Solutions Center/International Renewable Energy Agency capacity-building workshop that convened South Pacific Island and African nations.
- The Solutions Center provided consultations to **Rwanda** on mini-grids and rural electrification policies.
- **Sierra Leone** requested assistance in developing a strategic energy plan.
- The Solutions Center provided assistance to **Sierra Leone** by offering analysis on local biomass feedstock to inform policy design for biodiesel production.
- The Solutions Center provided policy and regulation assistance to **South Africa** to help the country encourage industrial energy efficiency, specifically in sectors that are inherently carbon-intensive, such as mining and concrete.
- The Solutions Center assisted three municipalities in **South Africa—Ekurhuleni Metropolitan Municipality, Msunduzi Municipality and KwaDukuza Municipality**—with good practices for processes and data collection to conduct greenhouse gas inventories.

- The Solutions Center assisted **Togo** with developing regulations governing off-grid electrification. The Solutions Center performed an off-grid solar photovoltaics analysis as part of a broader effort to implement measures from Togo's National Renewable Energy and Energy Efficiency Action Plans.
- **Uganda** requested assistance with developing a strategy for a biomass energy policy and program.