

# IMPACT

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## FROM LIGHTING AFRICA TO LIGHTING GLOBAL: CREATING OFF-GRID SOLAR MARKETS TO LIGHT UP THE WORLD

*The off-grid solar sector has taken a leap in the past decade to help developing countries reach their energy access goals. Fueled by new technologies and business models, the sector has provided improved electricity to approximately 360 million people to date. The Energy Sector Management Assistance Program (ESMAP) has been a key part of this revolution. It provided crucial technical and financial support to help leverage millions of dollars in World Bank financing, strengthen policies, and engage the private sector to accelerate off-grid electrification.*

Ann Muthoni, a farmer in Kenya, remembers when she had to use kerosene lamps to light up her house and how it affected her entire family.

**“We used to spend a lot of money on kerosene. In the evening, when the children were studying, the kerosene emitted fumes that would fill the house. The following morning when the children woke up, they were coughing.”**

Like Ms. Muthoni, hundreds of millions of people around the world still use polluting and expensive lighting sources, such as kerosene lamps or candles, that limit educational and economic opportunities and negatively impact health and quality of life.

Ms. Muthoni says that a lot has changed since she purchased a solar-powered LED lamp, a lighting alternative that makes everyday activities safer and more practical.

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### TIMELINE OF ESMAP SUPPORT

#### LAUNCH (2009)

- Design conceptual framework for implementation
- Create quality assurance standards

#### GROWTH (2010)

- Conduct consumer surveys in 10,000+ off-grid households
- Use consumer data to improve product design and other aspects of the market
- Work with governments to integrate off-grid lighting into rural electrification programs and remove regulatory and policy bottlenecks

#### EXPANSION (2012–Present)

- Help Lighting Africa expand its reach from 2 pilot countries to 29 countries and support Lighting Global

“In the evening, the children use the lamp for studying,” she said. “We don’t get any more infections. The lamp has been helpful to us.”

Modern, high-quality off-grid lighting and energy products can transform lives. Over the past decade, a concerted global push has created thriving markets for these products, demonstrating that off-grid solutions can complement sustained grid electrification to accelerate the rate of bringing electricity to the roughly 1.1 billion people who lack this service.

Today, off-grid solar products are reaching an estimated 73 million households, or more than 360 million people, globally. Children can study at night and businesses can operate for more hours each day, thanks to these products. Equally impressive is how the market has evolved and expanded. New technologies and innovative products and companies are being launched every year. Many governments across the world are strengthening their policy environments to facilitate this transformation.

Starting in Africa and later expanding to other regions, the World Bank’s Energy Sector Management Assistance Program has provided technical and financial support to fuel this revolution. It created the right policy environment and strengthened product quality standards, which helped to leverage millions of dollars in World Bank investments and engage the private sector to accelerate off-grid electrification.

## THE EARLY YEARS: BUILDING OFF-GRID SOLAR MARKETS IN AFRICA

In 2009, ESMAP partnered with the International Finance Corporation (IFC) to launch Lighting Africa—a pioneering initiative to develop a commercial market for the manufacture and sale of quality solar lanterns to light up the lives of 600 million people without electricity across Sub-Saharan Africa.

While Africans were spending nearly US\$10.5 billion on kerosene lighting products every year, companies selling and manufacturing off-grid solar products were unable to break into the vast, untapped off-grid solar market. Manufacturers were struggling to find business partners. Consumers were not aware of new technologies and low-quality products were pervasive, destroying confidence in the entire market. Financial institutions, unfamiliar with the industry, were unable or unwilling to exploit the market’s growth potential.

ESMAP was a catalyst for changing this landscape.

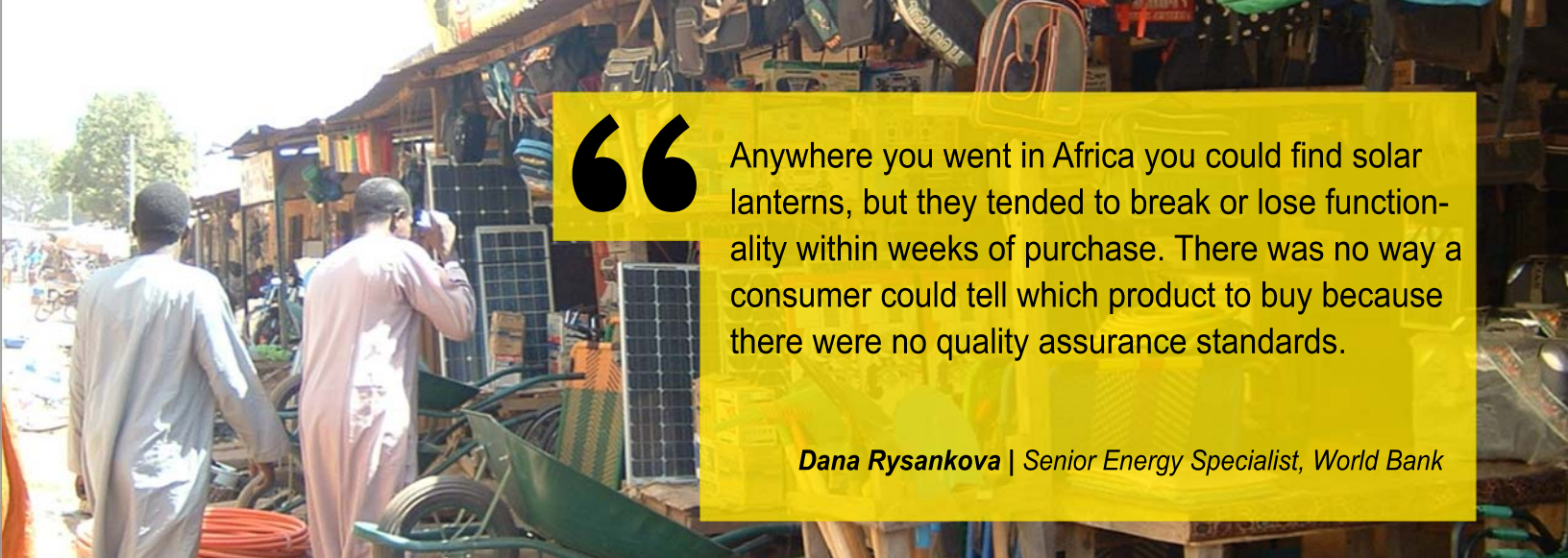
The first step was to identify the key barriers that blocked the scale-up of off-grid products and to outline actions to address them. ESMAP brought together manufacturers, distributors, consumers, financial institutions, development partners, and governments to devise joint solutions. For example, early consultations with the private sector identified the lack of quality standards to be a major impediment for developing and marketing quality products.

Consequently, ESMAP put together a solid quality assurance mechanism, the standards of which grew into globally accepted benchmarks for manufacturers and consumers, now recognized as **Lighting Global** standards. These standards increased trust among sellers and consumers and built confidence in investing in the market. With guaranteed quality, microfinance institutions became more willing to provide financing and governments became more open to support the off-grid sector.

Consumers benefited the most. To build consumer knowledge about available products, ESMAP helped design and implement public awareness campaigns. Through media outreach, product demonstrations, and entertainment at road shows consumers learned about the benefits of solar lighting products—better illumination, cost savings, reduced indoor air pollution, and more productivity in homes, schools, and businesses. They also learned how to distinguish substandard from high-quality devices.

### LIGHTING AFRICA’S REACH





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Anywhere you went in Africa you could find solar lanterns, but they tended to break or lose functionality within weeks of purchase. There was no way a consumer could tell which product to buy because there were no quality assurance standards.

*Dana Rysankova | Senior Energy Specialist, World Bank*

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Finally, ESMAP focused on the development of distribution channels, access to financing for product importers and distributors, as well as in-depth market intelligence on product design and customer preferences.

By 2010, the market was already seeing an upward trend and by 2012 its growth accelerated significantly, fueled by increased confidence in product reliability and many private players entering the industry.

Since the beginning of **Lighting Africa**, 14.8 million quality-verified solar lighting products have been sold, enabling 23.3 million people in Africa to meet their basic electricity needs. The goal is to reach 250 million more people by 2030 by scaling up efforts in current countries and expanding to new ones across the continent.

Now, when darkness falls on the bustling market in Mai Mahiu, Kenya, instead of packing up their goods and heading for home, most vendors switch on their locally purchased LED lights and continue selling well into the night.

**“I have been able to add two more hours of trading each day thanks to the small LED lighting system that costs just US\$20,” said Eunice Wanjiru, a fruit and vegetable seller at the market.**

## GOING GLOBAL

The unprecedented success of **Lighting Africa** gave rise to the World Bank Group’s **Lighting Global** initiative to fight energy poverty in the Americas, South Asia, East Asia, and the Pacific. In coordination with the Global Off-Grid Lighting Association (GOGLA), **Lighting Global** supports acceleration of off-grid electrification, working with both the private sector and governments, supporting market intelligence, quality

assurance, access to finance and business support services, and consumer education.

ESMAP supports **Lighting Global** by engaging governments through World Bank lending projects and policy dialogue.

As of June 2017, ESMAP helped to leverage more than US\$120 million in World Bank funding and more than US\$85 million from other financiers to invest in the off-grid solar market in several countries. Most of the World Bank funding is now used to support financing facilities to allow off-grid energy companies to accelerate efforts and reach out to poorer and more remote communities that the commercial market alone is unable to reach. ESMAP plays a crucial role in helping governments design these facilities.

## EXPANDING REACH THROUGH LIGHTING GLOBAL



- Afghanistan
- Bangladesh
- Haiti
- India
- Myanmar
- Pakistan
- Papua New Guinea
- Vanuatu

One such example is **Lighting Kenya**. While the off grid market enjoyed a diversity of companies and products, few of these products were reaching the poorer, remote, and sparsely populated areas of the country. Working through the World Bank's Kenya Off-Grid Solar Access Project, ESMAP worked with the private sector to design a facility that makes funds available to local off-grid companies to help them expand reach and to offer customer-financing options, such as pay-as-you-go purchasing models. The results-based financing made available by the facility to compensate for the higher costs of serving these remote households has addressed a critical gap in the market.

**Lighting Global** has benefited more than 131 million people with verified solar lighting products. The program has helped 39.5 million people meet basic lighting needs in 17 countries. In addition, the World Bank is actively engaged in the adoption of the **Lighting Global** toolkit and in lending operations with government partners in 7 additional countries.

Distributed solar products are achieving unprecedented development impact as a commercial, affordable means of delivering modern energy services to achieve economic development at scale. The number of lives impacted is staggering. Continuous support from ESMAP has been critical to grow the off-grid solar market in Africa and globally.



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## ESMAP MISSION

**The Energy Sector Management Assistance Program (ESMAP) is a global knowledge and technical assistance program administered by The World Bank.** It provides analytical and advisory services to low- and middle-income countries to increase their know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth. ESMAP is funded by Australia, Austria, Denmark, the European Commission, Finland, France, Germany, Iceland, Japan, Lithuania, Luxembourg, the Netherlands, Norway, the Rockefeller Foundation, Sweden, Switzerland, and the United Kingdom, as well as The World Bank.