



GENDER-SMART BUSINESS SOLUTIONS

WOMEN ENTREPRENEURS LIGHT THE WAY FOR SOLAR PRODUCTS IN INDIA



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International
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CASE STUDY: WOMEN ENTREPRENEURS LIGHT THE WAY FOR SOLAR PRODUCTS IN INDIA

Photos: Meghmani FineChem Limited

Project Overview

Every year worldwide, poor households spend \$37 billion on kerosene for lighting, biomass for cooking, and other unsustainable and unhealthy fuels.¹ This fuel use represents a substantial opportunity for private sector advances—chief among these, the development of solar lighting systems.

Building markets for solar lighting, particularly among a widely distributed, low-income customer base, requires technical and business-model innovation. IFC's Lighting Asia/India accomplished both by partnering with solar distributors in India, such as Frontier Markets, to develop a network of women entrepreneurs known as *Solar Sahelis*. This network helped to overcome the cost and awareness challenges of selling in last-mile (i.e., remote) markets. As a result, the partnership was able to increase sales by 30 percent, opening up the market for solar lighting products.

Project Objectives

Lighting Asia/India, part of IFC's Lighting Global program, accelerates access to clean and affordable energy in rural India by promoting modern off-grid lighting products, home systems, and mini-grid connections. The program works with the private sector to address barriers to growth by providing market intelligence, fostering business-to-business connections, strengthening last-mile access, and raising consumer awareness of quality-assured lighting products in the states of Uttar Pradesh, Bihar, and Rajasthan.

¹ International Finance Corporation (2012). *From Gap to Opportunity: Business Models for Scaling Up Energy Access*. Available at: http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_report_gap-opportunity

Challenges

In India, 400 million people do not use grid electricity as their main source of lighting,² a gap that disproportionately affects women. The lack of efficient energy connections places increased burdens on women's time by adding to their household responsibilities, which in turn reduces their opportunities to earn income. Women are also more exposed to health risks from kerosene oil and other fuel-based lighting sources.³

Despite its vast potential, the market for modern off-grid solar products in India is severely underdeveloped, with IFC assessments estimating a 5 percent to 7 percent penetration rate. Two key barriers to market development are building demand among last-mile customers and ensuring delivery to them.

The population in rural areas is least likely to have access to safe forms of lighting, yet it also presents sales challenges for two reasons: First, last-mile customers typically have low incomes, and because of their remote locations, cost more for the private sector to serve reliably. Second, these customers tend to have limited access to information and networks, decreasing their

² World Bank Group (2015). "Kerosene for Home Lighting: A Key Indicator to Prioritize Districts for Clean Energy Initiatives in India." Available at: http://lightingasia.org/india/what_new/kerosene-for-home-lighting-a-key-indicator-to-prioritize-districts-for-clean-energy-initiatives-in-india/

³ Deloitte (2015). "Women, Energy and Economic Empowerment." Available at: <http://www.theatlantic.com/sponsored/deloitte-shifts/women-energy-and-economic-empowerment/261/>

participation in energy markets. In India, the early entry of low-quality solar lighting also meant that potential customers were wary of spending money on likely faulty products. Lighting Asia/India knew that persuading customers to adopt solar lighting would require creative approaches.

Gender-Smart Solutions

Lighting Asia/India overcame the challenges associated with last-mile sales and built the market for off-grid solar lighting by focusing on women as distributors and customers. For distribution, Lighting Asia/India partnered with Frontier Markets, a clean-energy-products company, to develop a network of *Solar Sahelis*. The network is made up of a group of self-employed women recruited from self-help groups. These women-run alliances provide access to funds and technical assistance to help women in local villages improve their lives and start their own businesses.⁴ Based on initial results, Frontier Markets plans to expand the *Solar Sahelis* network from 250 women to 20,000 between 2016 and 2020.

Solar Sahelis promoted awareness of the benefits of high-quality solar lights through the *Suryodaya*, or "Sunrise," campaign. The campaign highlighted the

⁴ World Bank Group, "In Rural India, It Takes a Village—and Women's Self-help Groups — to Improve Livelihoods." Available at: <http://www.worldbank.org/en/news/video/2015/09/04/in-rural-india-it-takes-a-village-and-womens-self-help-groups-to-improve-livelihoods>

economic savings and health benefits of solar lighting. It also improved customers' ability to identify high-quality solar products, ensuring that substandard goods did not discourage the adoption of more reliable products. The awareness campaign particularly targeted women, reaching 56,000 across three states through self-help group meetings.

The Business Case

At the end of the 18 months' partnership between IFC and Frontier Markets, the *Solar Sahelis* network accounted for 30 percent of all sales. To date, Frontier Markets has sold 115,000 solar lamps and torches and 12,000 solar home-lighting systems—bringing the benefits of clean, safe, and affordable light to the homes of approximately 630,000 people. This was possible because the network helped overcome the cost and awareness challenges associated with last-mile distribution. Specifically, gender-smart solutions helped to build distribution networks, increase customer trust and market access, and enhance public awareness and recognition.

■ **Last-mile distribution:** Buying solar products is a longer-term, one-off financial investment, making it impractical to maintain a full-time, dedicated sales staff in remote communities. By working through independently employed women, Lighting Asia/India and Frontier Markets gained a flexible network that was also deeply tied to local communities. At the same time, *Solar Sahelis* earned an average of \$35

per month for part-time work, a substantial addition to what was typically a low or nonexistent income.

■ **Customer trust:** While high-quality solar lighting delivers cost savings in comparison to fuel-based lighting over time, in the short term, it can be a substantial investment for rural customers. Having a network of *Solar Sahelis* embedded in local communities and available to answer post-sales inquiries built the trust needed to purchase off-grid solar lighting.

■ **Market access:** Studies across markets show that women are key decision makers in energy purchases, influencing what type of lighting products to buy and how much is spent on them.⁵ Working with a network of female entrepreneurs facilitated sales in a market segment that male agents might not have been able to access.

■ **Public awareness:** Coordinated campaigns and an active network of entrepreneurs produced results: Consumer knowledge of the availability and benefits of high-quality solar lighting jumped from 25 percent to 60 percent among consumers in the target area.

■ **Public recognition:** Frontier Markets recently won the 2016 Ashden Award for Clean Energy for Women and Girls.

⁵ International Finance Corporation (2011). "Expanding Women's Role in Africa's Modern Off-Grid Lighting Market." Available at: http://www.esmap.org/sites/esmap.org/files/gender_lighting_highres_LOW%20RES.pdf



PUTTING THE BUSINESS CASE INTO ACTION WITH IFC

Recognizing that equality of economic opportunity between women and men drives productivity, profitability, and performance, IFC helps clients realize gender-smart solutions to their business challenges. We work with clients to better manage talent in their workforce and supply chains and to design products that tap the earning potential of the women's market. Our motivating force is the knowledge that when companies and people—no matter their gender—can reach their full potential, families, communities, and economies can achieve sustainable growth and prosperity.

What IFC partners say

Women are not an impact story, women are actually smart business.

Ajaita Shah

CEO, Frontier Markets

What entrepreneurs say

I really liked the solar products from when I first saw them. Being a Saheli gives me the chance to earn more money. I am trying to study, so I can buy books and anything the household needs.

Saroj Jat

Solar Saheli, Rajasthan

What the IFC says

Women are not only important consumers and entrepreneurs, they are also key catalysts of the modern off-grid lighting revolution.

Anjali Garg

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