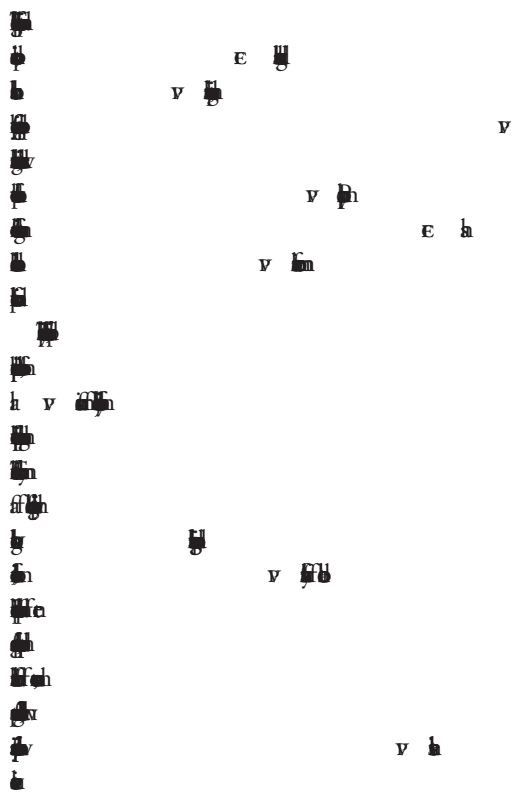
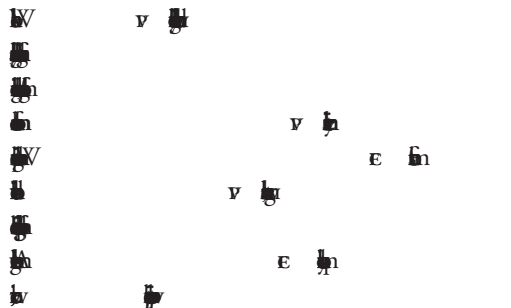


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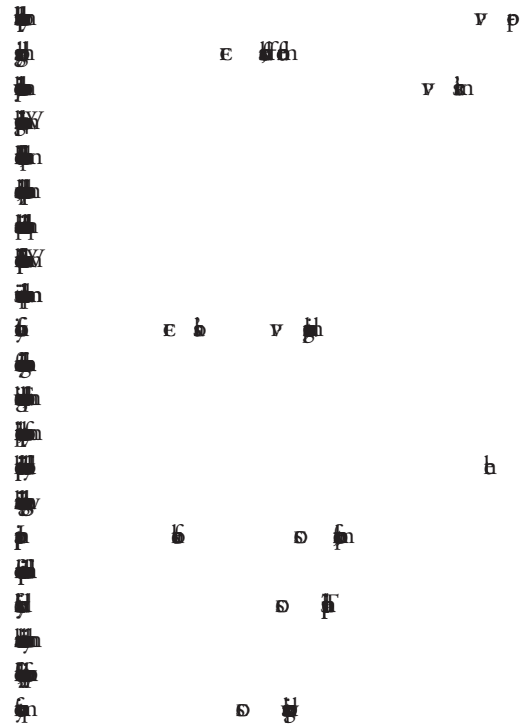


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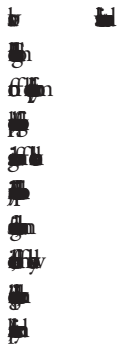


Expectations Were Overly Optimistic



Solar PV Is Not the Only Answer to Rural Electrification





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The Hard-to-Define and Very Segmented Solar PV Market



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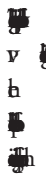
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Financial Affordability and Perceived Value



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LESSON LEARNED: GOVERNMENT SUPPORT CAN MAKE A DIFFERENCE

SOLAR PV PLANT CONSTRUCTION IN THE CZECH REPUBLIC

The IFC/GEF CEEF program* has issued a \$1.08 million project guarantee for a 1.2MW solar power plant, the largest solar PV power plant installed to date in Central and Eastern Europe. The solar PV power plant became operational on January 29, 2007. This installation, in Busanovice, southern Bohemia (Czech Republic), will decrease the country's CO₂ emissions by 743 tonnes annually, and will produce 620Mwh/year.

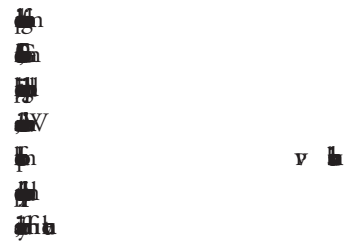
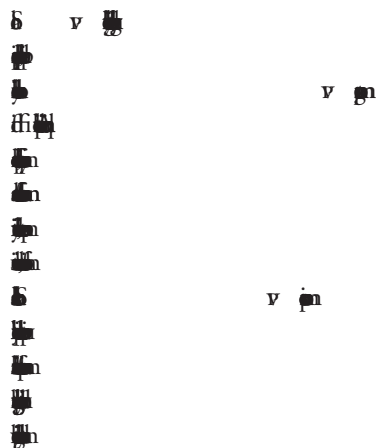
Electricity from solar PV, as well as other renewable sources, has the support of Czech national renewable energy legislation, which guarantees feed-in electricity tariffs for 15 years from project commissioning and off-take obligation for the grid operator. For solar PV power, the feed-in tariff is 13.62 Czech crowns/kWh (\$0.62/kWh).

The plant has already been connected to the distribution network and started commercial operation on February 1, 2007. The 2,660 silicon-based solar PV modules, which are spread across 6,170 m², can ensure electricity supply for 172 households. The maximum planned capacity of the power plant is 693 kW. A solar PV panel with an area of 1 m² produces as much electricity in a year as 250 kg of coal and saves a total of 750 tonnes annually of CO₂ that would otherwise be discharged into the atmosphere by the operation of a coal-fired power station. By the end of 2007, the plant capacity will be ramped up to 1.2 MW.

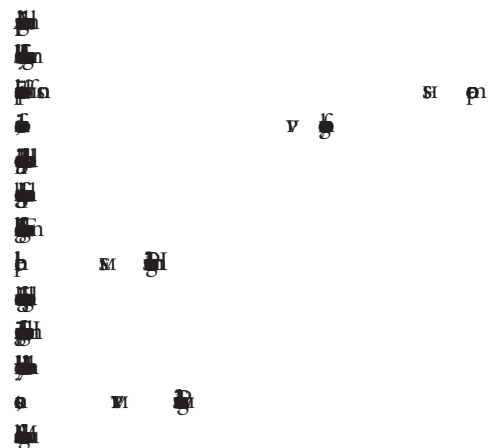
* IFC/GEF-CEEF, the Commercializing Energy Efficiency Finance Facility, operates in Eastern Europe with both GEF and IFC financing. The facility provides a partial guarantee for loans made by local financial intermediaries for EE/RE projects, as well as technical assistance.



Economies of Scale



Government Support and Enabling Environment



The Grameen Bank is a micro-finance institution that provides financial services to the poor, particularly women, in rural areas of Bangladesh. It was established in 1976 by Muhammad Yunus, who received the Nobel Peace Prize in 2006 for his work. The bank is notable for its group lending model, where members of a group are collectively responsible for each other's loans. This model has been widely studied and replicated in other parts of the world.

GRAMEEN BANK

Grameen Bank was established by Professor Muhammad Yunus in 1971 as a research project. By December 31, 1995, the bank had equity of \$100 million. Not regulated by the Bangladesh Superintendent of Banking or any similar regulatory body, Grameen Bank is notionally owned by its 2 million members, each of whom owns one share. The majority of the bank's clients are poor and landless and live in rural areas, with 94 percent being women. The members elect 9 of the 13 members of the Board of Directors.

In 2006, Muhammad Yunus and Grameen Bank were awarded the Nobel Peace Prize for their work on economic and social development among the poor.

Private equity is a form of financing where companies are owned by a small number of individuals or institutions, rather than being publicly traded. It is often used to fund growth and expansion. However, it can also be used to extract value from a company, leading to job losses and reduced investment in research and development. The use of private equity has increased significantly in recent years, particularly in the UK and Europe.

Private Equity Is Not the Answer

The use of private equity is often criticized for its focus on short-term profits and its potential to undermine the long-term interests of a company and its employees. It is argued that private equity firms are more likely to focus on financial engineering and cost-cutting, rather than investing in innovation and growth. This can lead to a loss of jobs and a decline in the quality of products and services.

The need for flexibility in investment offerings is a key challenge for financial institutions. Investors are increasingly looking for more tailored and flexible investment options that can meet their specific needs and risk profiles. This requires financial institutions to develop more innovative and flexible investment products.

Need for Flexibility in Investment Offerings

Financial institutions are facing increasing pressure to provide more flexible investment options to their clients. This is driven by a number of factors, including the growing demand for personalized investment solutions and the need to attract and retain clients in a competitive market. To meet this demand, financial institutions need to develop more innovative and flexible investment products that can be tailored to the specific needs and risk profiles of individual investors.

Financial institutions are still finding solar PV to be too risky. This is due to a number of factors, including the high upfront costs of solar panels, the uncertainty of government subsidies, and the long payback period for solar investments. However, as the technology continues to improve and costs decrease, solar PV is becoming a more attractive investment option for financial institutions.

Financial Institutions Still Find Solar PV to Be Too Risky

The solar industry has made significant progress in recent years, but financial institutions remain cautious about investing in solar PV. This is primarily due to the high initial costs and the uncertainty of government subsidies, which can significantly impact the profitability of solar investments. Additionally, the long payback period for solar investments makes them less attractive to investors who are looking for shorter-term returns.

The use of solar PV is still limited in many parts of the world, particularly in developing countries. This is due to a number of factors, including the high upfront costs of solar panels, the lack of government subsidies, and the limited access to financing. However, as the technology continues to improve and costs decrease, solar PV is becoming a more viable investment option for many people.

LESSON LEARNED: THE NEED FOR A MIX OF TECHNOLOGIES

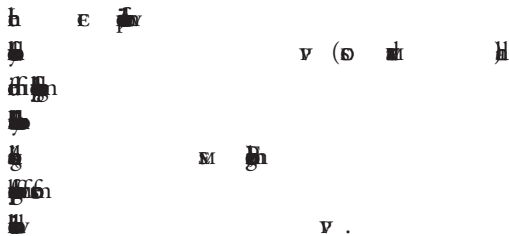
THE PORTFOLIO APPROACH TO DISTRIBUTED GENERATION OPPORTUNITY (PADGO) PROJECT

The ultimate goal of the PADGO project is to reduce CO₂ emissions by displacing central fossil-fuel-based generation in favor of a portfolio of renewable and clean fossil-based distributed energy (DE) generation technologies with waste heat recovery (also known as combined heat and power). In order to achieve this goal, the project has been divided into two phases.

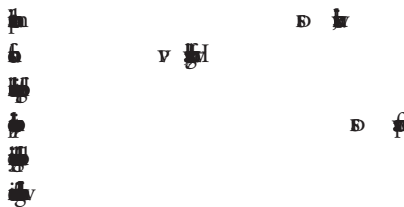
Phase 1 of the project will focus on Sri Lanka, and will have three specific goals. First, it will develop a performance framework that would enable risk sharing between IFC and the local banks on their existing portfolio of mini-hydro investments. Second, PADGO will focus on introducing new technologies to the DE mix by promoting complementary DE technologies (for example, reciprocating engines, biomass, PV, wind). IFC will work with established private sector players to do one or more pilot projects with a technology that has not been extensively implemented in Sri Lanka. Third, it will identify the key problems that the electricity grid may face with large-scale DE generation, and will develop key guidelines on how DE generation can be assimilated into an integrated resource planning effort at Ceylon Electricity Board.

During Phase 2, IFC will incorporate into the risk-sharing framework the lessons learned from the introduction of the new technology-based pilot project initiated in Phase 1. The framework will thus be made more robust and applicable to a larger set of technologies. The financing process will move closer to an asset-backed securities approach, as larger volumes of transactions are targeted. Significant progress is also expected during Phase 2 on the integration of DE technologies into a mini-grid structure that allows for dispatch capability and value for capacity.

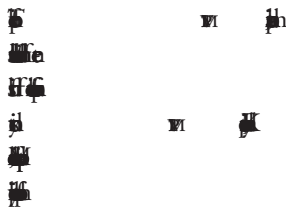
Need for a Broader Technological Focus

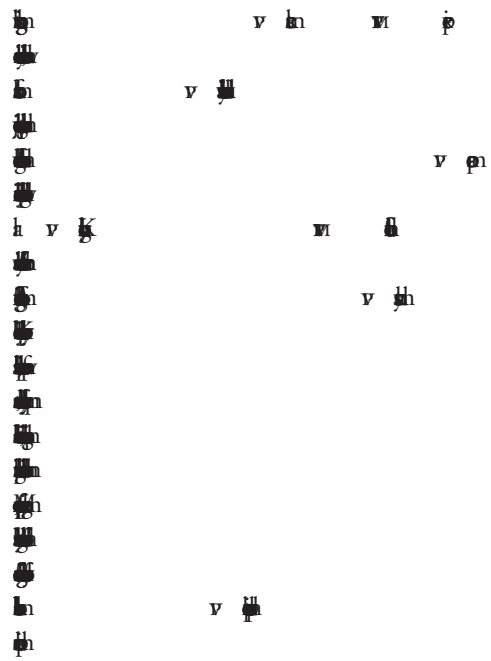


Need for a Broader Operational Focus

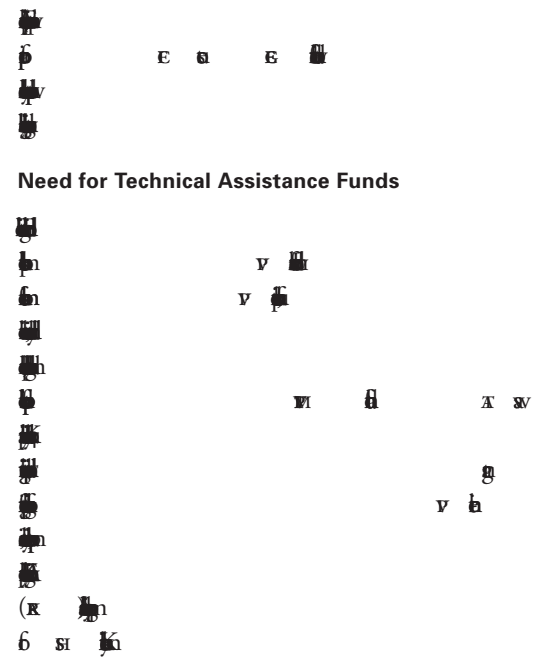


Limited Replicability

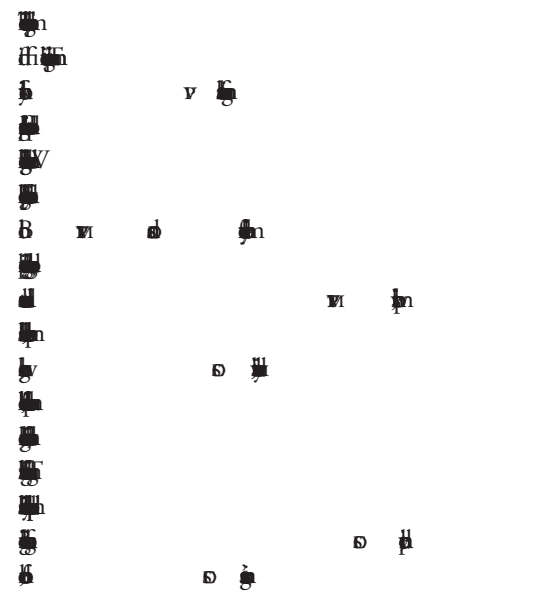




There Are Profitable Opportunities in the Solar PV Market, But They Lie Further Upstream in the Value Chain



Shareholder Diversity



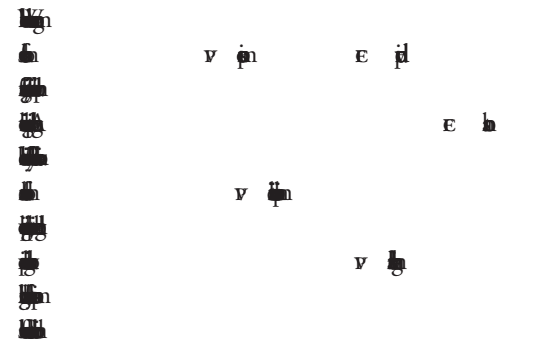
LESSON LEARNED: MOVING UP THE VALUE CHAIN

MOSER BAER IN INDIA

Moser Baer India Ltd. (MBIL) is the third-largest manufacturer of recordable optical storage media products (CDs and DVDs) in the world. MBIL is also an existing IFC client. Currently, MBIL is undertaking a two-year diversification program that involves setting up an export-oriented solar PV cell and module manufacturing facility with an installed annual production capacity of 80MW in Greater Noida, India.

IFC has recently approved a \$22.5 million long-term loan to the company to support this \$92 million project. This project, which has the potential to avoid 80,000 tonnes of CO₂ emissions annually, will also lead to the creation of about 600 additional jobs.

INDIA
SURVEY



LIGHTING THE BOTTOM OF THE PYRAMID

The Lighting the Bottom of the Pyramid program will leverage IFC's global network, industry expertise, and regional experience, as well as donor funds to catalyze local and international lighting-related companies to offer the unelectrified population in Kenya and Ghana greater access to modern and affordable off-grid lighting products and displace fuel-based lighting products (kerosene lamps, candles).

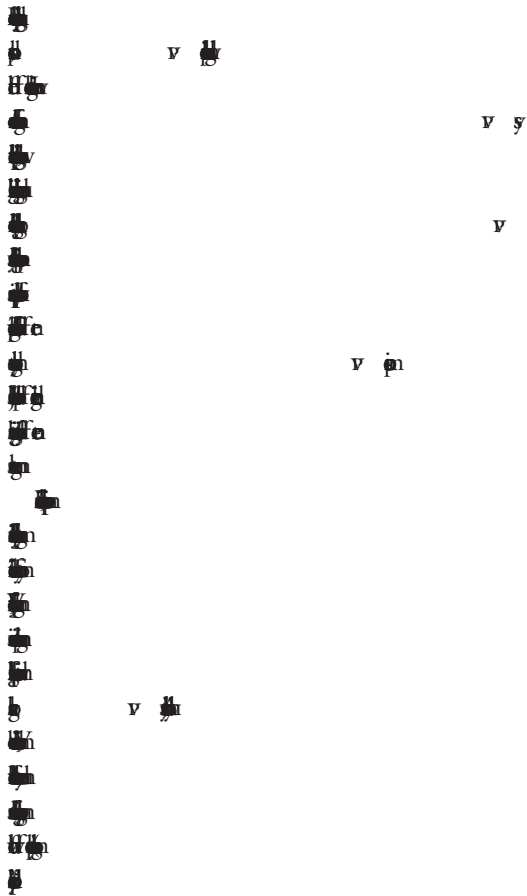
Current consumption of fuel-based lighting represents a large global market, mostly served by oil and gas companies, but largely untapped by lighting companies. Independent estimates indicate that worldwide spending on fuel-based lighting in developing countries is \$38 billion per year. In Kenya and Ghana alone, IFC estimates the total spending on fuel-based, off-grid lighting to be \$1.4 billion per year. Hence, IFC believes there is an opportunity to attract lighting companies to enter and compete in the fuel-based, off-grid lighting market with modern and affordable off-grid lighting products, harnessing the private sector profit-seeking motivation to increase access to modern lighting services and reduce poverty.

In order to seize this opportunity, IFC will facilitate the entry of local and foreign lighting companies to this market by helping firms (i) understand the market, including consumer behavior and preferences concerning lighting, acceptable pricing points, and distribution channels, and (ii) understand and mitigate the perceived risks of entering into a new market in a region that, for most private companies, is very challenging. The entry of several modern lighting companies in this market and their competition for market share will bring unelectrified citizens in Kenya and Ghana a variety of modern off-grid lighting products that will be better and more affordable than fuel-based lighting. Their lower power requirements will also enable more cost-effective use of solar PV as a power source (e.g., solar PV lanterns).

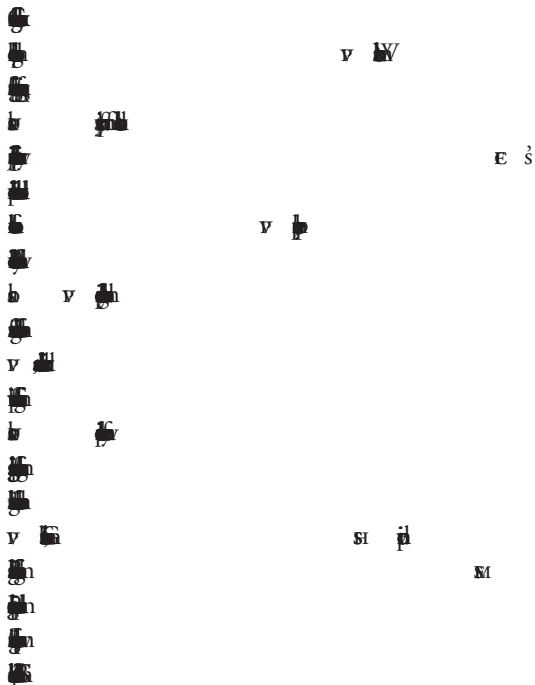
As of January 2007, 135 private companies and 63 stakeholders from 35 countries had expressed interest in participating in this initiative. The project target end-results for Kenya and Ghana are (1) to provide greater access to off-grid lighting products that are more modern and affordable than fuel-based lighting; (2) to reach 316,000 (low-end scenario) to 1,500,000 (high-end scenario) end users with modern, off-grid lighting products by 2015; and (3) to reduce CO₂ emissions from fuel-based lighting from 782,000 tonnes (low-end scenario) to 3,909,000 tonnes (high-end scenario) by 2015.

For more information, please visit www.ifc.org/led.

Product Offering and Market Segmentation



Provision of Consumer Financing



Management and Staffing



REDACTED

REDACTED

REDACTED

REDACTED

Sales versus Rental

REDACTED

REDACTED

REDACTED

REDACTED

Local Partnerships and Government Relations

REDACTED

REDACTED



Marketing

Marketing

Marketing

MI

Entrepreneurial Spirit

Entrepreneurial Spirit

Entrepreneurial Spirit

