



Renewables: Powering the World with Clean, Affordable Energy

With world electricity demand expected to double by 2030, and climate change becoming an increasingly critical challenge in emerging market countries, IFC's Global Manufacturing and Services department is prioritizing efforts to develop viable, cost-competitive clean energy options by financing private sector investment in renewable technologies. Although the work is complex, the goals are clear: to reduce poverty by expanding access to affordable sources of electricity; and to mitigate the impacts of climate change.



Renewables Strategy

We invest in projects with robust business fundamentals, a strong development impact, and positive influences on local economic activity, including long-term job creation. Our efforts are focused on investments in:

Solar Power

Solar photovoltaic (PV) production represents the world's fastest-growing energy technology, with 40 percent growth in 2008 alone. IFC is ramping up efforts here, including both investments in early stage technologies and planning for more than \$100 million in solar panel investments in each of the next few years. The Global Manufacturing and Services team focuses on the manufacturing value chain from the manufacturing of cell and modules to financing balance of systems and locally based integrators.

Wind Power

Focus is on emerging market manufacturers of wind turbines and components that are building scale and reducing costs across the value chain. IFC is helping client companies:

- scale up wind turbine and component production while improving manufacturing quality and reliability
- acquire and develop proprietary designs for larger turbines or components
- establish overseas service networks to support turbine exports
- enter the market based on track record in related manufacturing business

Track Record

Our renewables portfolio is part of IFC's \$3 billion-and growing energy lending portfolio. In addition to financing, we bring added value to our clients:

- Cross-disciplinary approach: IFC has experts in environment, infrastructure and funds departments that collaborate with our manufacturing and services team to assist our client companies
- Relationships with institutional investors: understanding the dynamics of emerging markets and ability to mobilize additional sources of financing both internationally and locally

Development Impact

- Expanding access to affordable sources of electricity: reduces poverty and improves quality of life for millions
- Stimulating local markets: drives down costs and expands local industry
- Creating direct and indirect "green" jobs
- Reducing greenhouse gas emissions and reversing climate change by strengthening the viability and affordability of renewable energy options

Supporting Local Solar Market-Makers: India's Moser Baer

India-based Moser Baer is the world's third largest manufacturer of recordable optical storage media products, including CDs and DVDs and longtime IFC client. Since 1996, IFC has provided \$71 million in debt and equity in support of the company's various expansion efforts. The company is building on its optical expertise to diversify into solar photovoltaic cell manufacturing. Moser Baer's new solar PV cell and module manufacturing facility in Greater Noida, India, has an annual production capacity of 80 MW which is financed, inter alia, by IFC. The company is also investing in advanced PV technologies that will make PV modules more cost-competitive through increased cell efficiencies, reduction in silicon consumption, use of non-silicon materials and industrialization of existing technologies.



IFC role and development impact:

IFC provided \$22.5 million in financing toward construction of Moser Baer's solar PV cell manufacturing facility and research and development project, against \$92 million total project costs. IFC's support for the company's first investment in the solar industry has led to Moser Baer's additional diversification in the solar industry and helped establish the company as a global market leader. Now, the company is investing in:

- solar concentrator technology in joint venture with a US company
- upgraded metallurgical Silicon technology (UMG), a less expensive but less efficient form of solar grade Silicon through a joint venture in Slovenia
- α -Si thin-film module production
- solar power pilot projects in India

Harnessing the Sun's Power in China: XinAo Solar ENN

China's 1 billion-plus population and its massive industrial complex are driving a growing demand for electricity. With IFC's help, one company, ENN Solar Energy Co. Ltd, a subsidiary of the XinAo Group is making it possible and more cost effective to harness a clean, natural, renewable energy source—the sun—to help meet this demand.

The company is investing in \$240 million to build, install, commission, and operate a thin-film line capable of producing 60 MWp of amorphous silicon solar PV modules.

This is the first α -Si thin-film production facility in China, and establishes the XinAo Group as a top-five global leader in the industry.

IFC role and development impact:

- IFC has provided \$158 million in debt and equity financing
- The project will help establish the region as a center for the industry: suppliers are expected to cluster around the plant, establishing dedicated production facilities to supply the XinAo plant and other thin-film producers
- The project contributes to a general increase in investment in the solar thin-film manufacturing industry, helping producers reduce operating costs and enhancing the viability of solar power as a cost-competitive energy source
- The project will create direct and indirect jobs

For more information about IFC's financial products and advisory services in the renewables sector, please contact:
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