

GEF/IFC
**Photovoltaic Market
Transformation Initiative**
(PVMTI)

Bernard McNelis



IEA-PVSDC Workshop, Vientiane, Laos 8-9 April 2005

A Joint IFC/GEF Initiative....

“.....to accelerate the sustainable commercialisation and financial viability of PV technology in the developing world”

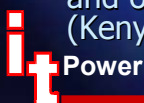
“.....to provide successful examples of sustainable and replicable business models that can be financed on a commercial basis”



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Goals

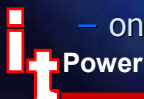
- \$25 million available for concessional funding (notionally \$15m in India, \$5m Kenya, \$5m Morocco)
- Concessional funds provided as:
 - debt (senior or subordinated)
 - partial risk guarantees
 - equity (to a lesser extent)
 - up to 10% as grant for non-commercial activities
- Significant co-financing sought from investee companies and other lenders (Kenya 1:1, Morocco 2:1, India 3:1)



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Targeting downstream operations

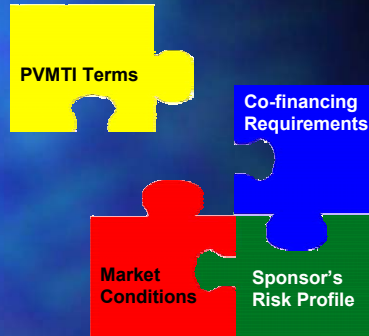
- Extending sales and distribution networks
- Merging and expanding assembly, delivery and service operations
- Building consumer finance infrastructure and providing relevant products
- No funding for:
 - technology development
 - manufacturing
 - on-grid power stations



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Flexible Terms and Conditions

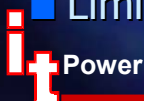
- Most terms negotiable
- Terms & conditions should be as "close-to-commercial"
- Project should demonstrate long-term commercial sustainability
- Investments until 2001, repayments by 2007
- Full due diligence required



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Barriers to Market Development identified

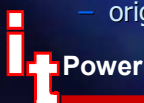
- Lack of sustainable business models
- Lack of appropriate finance
- Lack of end-user finance
- Limited managerial and technical skills



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What works in one country may not work in another....

- India
 - large market with several players (service and manf.)
 - backdrop of significant govt. subsidies
 - focus beyond SHS (street lighting, drinking water)
 - value-added approach
 - mainstream financial players showing interest
- Kenya
 - active market, but dominated by "trader mentality"
 - focus entirely on SHS
 - nexus between comm banking and savings coops key
- Morocco
 - well-regarded national utility with mandate for elec.
 - primary focus is SHS
 - originally fee-for-service (with initial utility subsidy) was likely



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Business models financed

INDIA	Shakti Alternative Energy SREI Intl Finance Shell Renewables India AquaSolar Sunlit Media <i>PV service co.</i>	PV sales piggybacking on LPG sales network Major FI providing consumer finance for SHS w/ NGO Multinational developing sales/svc infra in partnership w/ major FIs Sale of drinking water -- value-added product provided using PV Streetlights w/ ads -- value-added service provided using PV <i>Retail sales network supported by rural banking infrastructure</i>
KENYA	Muramati Tea SACCO Barclays Bank w/ KUSCCO KCB -- Consumer Loans KCB -- SACCO Loans <i>SME Project</i>	Creditworthy credit union borrowing directly for SHS w/ svc provider Comm bank lending to credit unions for SHS w/ svc provider(s) Commercial bank (retail) lending for SHS w/ svc provider(s) Comm bank lending to credit unions for SHS w/ svc provider(s) <i>On-lending to consumers and SACCO's for SHS purchase and working capital finance for PV SME's</i>
MAROC	Salafin-Afrisol Al Amana-Noor Web <i>2 MFI-PV Service Co.</i>	FI providing consumer finance for SHS Microfinance institution providing consumer finance for SHS <i>Microfinance institutions providing consumer finance for SHS</i>



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Financial instruments used

- Debt
- Equity
- Kicker/Quasi-equity
- Partial risk guarantee
- Partial credit guarantee
- Grant



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Investments to date (1)

Kenya (total US\$4.7m)

- Barclays Bank: US\$2m
 - Provision of loans to KUSCCO member SACCO's for on-lending to members to purchase PV systems
- Muramati Tea Growers SACCO: US\$0.6m
 - Provision of loans to Muramati members to purchase PV systems
- Equity Building Society: US\$2.1m
 - Consumer and Corporate loan schemes for purchase of PV

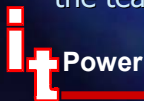


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Muramati Districts Tea Growers SACCO, Kenya

Provision of savings and loans services to over 25,000 farmers in the tea sector. \$0.6m PVMTI funds

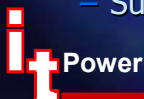


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Investments to date (2)

Morocco (total US\$3.7m)

- **Salafin: US\$1m**
 - Provision of loans to end users to purchase PV systems
- **Al Amana/Noor Web: US\$0.7m**
 - Provision of micro-credit to end users to purchase PV systems and expansion of Noor Web infrastructure
- **Zakoura: US\$0.9m**
 - Micro credit scheme for purchase of SHS
- **Sunlight Power Maroc: US\$1.1m**
 - Supplier will set up infrastructure in new regions



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Al Amana and Noor Web, Morocco.

Provision of micro credit for SHS in Morocco. \$0.7m guarantee from PVMTI with funding from Banque Populaire.

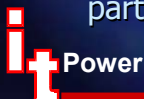


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Investments to date (3)

India (total US\$11.9m)

- **Shri Shakti Alternative Energy: US\$2.2m**
 - Expansion of network of Energy Stores in Southern India selling PV and RE products
- **SREI International Finance: US\$3.5m**
 - Introduction of a credit scheme for PV customers in West Bengal
- **Shell Solar India: US\$4m**
 - Expansion of network of Shell Solar Centres in Southern India and establishment of credit scheme for end users in partnership with local financial institutions

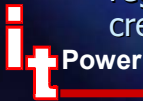


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Investments to date (4)

India (total US\$11.9m) continued..

- **Aquasolar:** US\$3m
 - Establishment of network of PV powered water pumping, purification and bottling stations in rural areas of India
- **Sunlit Media Solutions:** US\$2.3m
 - Establishment of a network of PV powered advertising signs
- **SELCO Solar Light:** US\$1.1m
 - Expansion of installation service infrastructure to new regions and further penetration of existing areas via credit sales in partnership with local banks



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Shri Shakti Alternative Energy, India.

\$2.2m PVMTI funds, network of 8 energy stores set up.



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Issues – business/financial

- *Size of Prize:* Capable “deep-pocket” sponsors interested but concerned about opportunity cost
- *Consumer Financing:* Many of domestic FIs with rural infrastructure not credit-worthy. Capable and bankable FIs increasingly interested, but remain concerned about collection.
- *Management Skills:* Need extending for most service providers to ensure success
- *Procurement:* Constraints imposed by multilateral lenders limiting use of funds



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Issues - technical

- *O&M:* Logistics a major barrier
- *Quality:* Domestic training and testing/certification facilities limited in most countries
- *Battery Recycling:* Difficult to structure adequate commercial incentives



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Early lessons

- *Business Environment:* "What works" in one country may not work in another -- each country is unique
- *Sponsors:* Strong sponsors willing to enter market to partner existing players -- provides exciting opportunities for increasing scale dramatically
- *Rates of Return:* Several projects likely to be commercially viable after only one round of concessional financing
- *Sources of Capital:* Third party commercial investors willing to review investments in the PV sector