CHINA

RENEWABLE ENERGY DEVELOPMENT PROJECT

PV COMPONENT

PROJECT IMPLEMENTATION PLAN

AND

PV IMPLEMENTATION MANUAL

PREPARED BY

PROJECT MANAGEMENT OFFICE (PMO)
GEF/WORLD BANK ASSISTED CHINA RENEWABLE ENERGY DEVELOPMENT PROJECT
STATE ECONOMIC AND TRADE COMMISSION (SETC)
THE PEOPLE’S REPUBLIC OF CHINA

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CHINA
RENEWABLE ENERGY DEVELOPMENT PROJECT
PV COMPONENT
PROJECT IMPLEMENTATION PLAN

1. Objectives and scope
The project aims to improve the quality of PV products and after-sales service used for household electrification, expand the market, and ultimately reduce the cost of PV systems.

- **Investment Sub-Component**: Grants will be provided to PV companies. The companies would market, sell, and maintain about 10 MWp, an estimated 300-400,000 systems, in Qinghai, Gansu, Inner Mongolia, Xinjiang, Xizang and Sichuan. The systems will be used by households and institutions in isolated rural communities without access to electricity, to power lights, radios and TVs. Grants will be paid to the companies, after proof of sale of a system with a module capacity of 10 Wp or greater, at the rate of $1.50/Wp.

- **Market Development Program Support Sub-Component**: The direct grants will be complemented by business development support to the companies. This would include support for activities such as a public information campaign, developing the commercial capabilities of PV system companies, developing mechanisms for consumer financing, and other activities to be defined during project implementation;

- **Institutional Strengthening Sub-Component**. To strengthen institutional capacities to sustain PV market development, additional activities would be carried out, including: (a) product quality assurance initiatives, including strengthening PV modules and components testing and certification capabilities at three existing centers, assistance to establish national PV component and system standards and improve product quality at the company level; and (b) support for project implementation and management, including interaction with consumers and companies to obtain feedback, other performance monitoring, and consumer protection.

2. Critical success factors

2.1 Investment sub-component
The project is market based, depending on the expansion of consumer sales. The continued existence of competitive, functioning private markets and relatively stable broad economic conditions is necessary.

2.2 Market development sub-component
Market expansion depends on ability of companies to extend sales to different market segments and for larger products by offering credit sales and by building the business capabilities of the companies. Continued development of rural credit markets and increasing adoption of market-based methods in rural areas are necessary for the success of this component.

2.3 Institutional strengthening sub-component
Product quality and service quality improvement is an essential requirement for successful market growth and for the sustainability of the companies. The success of this component depends on the demand response of consumers to products with higher quality and the competitiveness of companies who produce higher quality products at prices acceptable to these consumers.

3. Strategy and implementation plan

3.1 Grant disbursement

Each participating company will receive a grant of $1.50/Wp for each eligible system sold in the Project market areas. This section sets forth the eligibility criteria for: (i) companies; (ii) system equipment; (iii) market areas; (iv) customers and (v) sales dates. It also describes the procedures for approving a PV company’s participation in the Project and for grant payments, including arrangement for escrow accounts.

3.2 Grant eligibility criteria

3.2.1 Eligible PV companies

Participation will be open to all companies who meet the following criteria.

To be eligible to receive GEF grants, a PV company must initially meet, and continue to meet, the following criteria:

a) have operations that include sales of PV systems or other products in the rural areas of the areas covered;

b) have annual, audited accounts that include its PV systems sales;

c) be financially viable;

d) prepare a business plan acceptable to the Bank that demonstrates that:
   i) the PV systems sold would meet the Project's technical specifications;
   ii) the company’s operations would be commercially viable;
   iii) the company has made arrangements to increase its sales either by expanding its service network or by increasing marketing efforts in existing market areas;
   iv) the company would abide by adequate consumer protection plans, including a returns policy, warranties, and adequate after-sales service networks; and
   v) the company has a system to provide data required for project monitoring by PMO. The company would retain documentation for the full period of the warranty of each PV module sold. It would also allow access to representatives of the PMO or others designated by the Bank, to its customer data base, including records of sales, installations, collections, complaints, repairs and warranties.

  e) agree to abide by competitive code of norms for dealing with customers, employees, and other companies, including:
    i) providing customers with complete and correct information about products, services and prices;
ii) competing openly, not engaging in actions that might prevent competitors from entering or operating in particular market areas.

3.2.2 Eligible equipment
Any system sold, with PV capacity of 10 Wp and larger, is eligible for the grant throughout the project life. Increasing the system size for eligibility later in the project was discussed during project preparation and rejected.

The PMO has already officially informed the Chinese PV module manufacturers about the key requirements that they must meet in order for their modules to be eligible for use in the Project. They include: (a) certification in accordance with the complete GB 9535 standard; (b) have the manufacturer’s quality assurance process in place so that an official module rating label can be affixed; and (c) agree to other labeling, requirements in the Project specifications, including use of module serial numbers. See Annex D on quality assurance.

The National Electric Light Sources Quality Inspection Center, Postal and Telecommunications Industry Standardization Institute, Shanghai Institute for Space Power Systems and the Tianjin Institute for Power Systems are all high caliber institutes with the necessary equipment and qualified staff to conduct all the essential certification tests. Some capacity strengthening is needed for the institutes to be capable of testing a broader range of components to ISO 25 requirements.

3.2.3 Eligible markets
The initial geographical focus for qualifying sales is Qinghai, Gansu, Inner Mongolia, Xizang, Xinjiang and western Sichuan.

3.2.4 Eligible customers
Qualifying sales are final sales to eligible customers. Eligible customers are individual households, shops and other businesses, and local county and lower level institutions and community groups in the eligible market areas.

3.2.5 Eligible sales dates
Qualifying sales are those made after the World Bank has issued its (a) no objection letter to the PMO for the participation of the PV company in the project, (b) company has signed the PV subgrant agreement, (c) sales take place after the legal agreements for the China RED Project have been signed by the Government of China. Grant payments may be requested by the PV companies from the PMO no later than six months prior to the closing date of the project.

3.3 Other subsidies
The project support is intended to support the market development. Grants will not be paid for sales to companies which benefit from other subsidies if these other subsidies weaken/benefit one or several companies over other companies or in other ways distort or hamper market development.

3.4 Procedures for approving a PV company’s participation in the project
The steps for approving a PV company’s participation in the project are as follows:

1) company applies to the PMO to participate in the Project
2) The Business Development Assistance (BDA) team will appraise each company that applies to participate and submit the appraisal together (1) Business plan (2) First year plan (3) Audited financial statements (4) BDA summary report, main content as shown in the Annex I.

3) PMO reviews the company’s appraisal package submitted by BDA team and determines whether they are complete and conform with project requirements

4) if acceptable, the PMO forwards the appraisal package to the Bank, including: (1) A description the PV Company and an appraisal of the PV Sub-project (2) business plan (3) first year plan, requesting the Bank to issue NOL for the company’s participation in the project

5) after a satisfactory review, the Bank issues a letter indicating no objection to the company’s participation

6) upon receipt of the Bank’s no objection letter, the SETC enters into a grant contract with the PV company.

3.5 Procedures for grant payments

SETC will manage the Special Account on behalf of the Ministry of Finance (MOF) for the GEF grant, according to established procedures. PMO would pay grants from the Special Account to the PV company’s bank account.

There would be a transfer-grant agreement between MOF and SETC, and subsidiary grant agreements between SETC and each company.

Grant payment requests would be made by the companies to the PMO. The PMO would review the documentation and, if complete and in compliance with the requirements, would authorize the payment and send the payment directly to the company.

The PMO’s authorization and disbursement procedure for grant payments would be as follows:

1) Customer signs the PV system acceptance receipt which gives details of the PV system including the serial number of the PV module, the owners name, address and identity card number.

2) PV company makes a grant payment request to the PMO in the form of a list with key information on customers and systems for which grant payments are requested. The request would be sent at agreed intervals (e.g., three months) and in agreed minimum size batches (e.g., 50 units or $1,000) to the PMO along with its request for grant payment.

3) Local PV module manufacturers will send the PMO details of modules shipped to the participating PV system company. Imported modules have shipping documents with this information. The required details include module Wp rating, serial number of each module and date of shipment.

4) PMO verifies that the modules reported as sold came from a shipment of a qualified manufacturer. This verification is intended to prevent companies from attempting to obtain multiple grants per module and is one check on quality.

5) PMO audits 25 sales reported by each company to verify sale and confirm compliance with specifications, before authorizing grant payment for the first time.
6) PMO authorizes the special account to make grant payments after satisfactory results of audit.
7) PMO authorizes subsequent grant payments as described above, while conducting random audits, as necessary, to confirm that reported sales meet project requirements.

3.7 Market Development Sub-Component
A program approach will be taken to supporting market development, to create synergy among the activities and maximize their combined impact. The PMO will be responsible for developing and managing the program, through an active process of seeking requests or proposals from consumers, communities and companies, and developing ideas for activities that respond to market conditions. It is expected that most of the activities would be carried out by subcontractors, or project participants. The GEF grants would provide full funding or a partial share of the funding, including for pilot marketing efforts proposed by the PV companies, depending on the type of activity and the availability of co-financing from sponsors.

Before effectiveness, the PMO would prepare a one year detailed market development work program that would be approved by the Bank. The market development program would include efforts to improve quality. The program would be prepared in consultation with representatives of companies, consumers, other agencies, and communities affected by the project. This program would show for each major activity the implementation plan, the budget and grant support needed, and the expected results in relation to the overall project objectives. Thereafter, on an annual basis, the PMO would present a review of the past year’s program and its proposed program and budgets for the next year. The annual plan will be submitted to the Bank by October 31 of each year and finalized after review by the Bank by December 31 of each year.

Each year’s market development support program would be approved by the PMO and the Bank, in consultation. This would be timed to coincide with Bank supervision missions.

The indicative outline of Market Development Program activities and tentative GEF funding levels follows.

- **Market monitoring and MDP activities coordination** ($0.25 million GEF). The program would support market monitoring. This would include collecting retail and supplier price information, conducting consumer focus groups, conducting annual sample surveys in the project area, and reviewing customer satisfaction information from the results of end-user verifications and other sources. The monitoring would provide information to support the design and evaluation of market development initiatives and to assist in monitoring the effectiveness of project interventions. There would be regular reporting on prices, the results of consumer focus groups and other information. The market development program would be coordinated by a full time coordinator acceptable to the Bank who would have demonstrated capabilities in assisting companies to develop business plans and in coordinating and reporting on programs.

- **Public Information Program** ($0.25 million GEF). The program would provide objective information on product quality, performance, prices, warranties, and consumer protection
measures, using radio, TV and newspaper ads, etc.. It would also inform PV companies about qualified suppliers and products. It would make available channels for consumers to complain, receive compensation, or provide feedback to the PMO. This would include regular focus group sessions with customers and potential customers. It needs to start early and continue throughout the project. On a routine basis information would be provided to companies and suppliers on the status of the market and the project. It is envisioned that this would include a Web site containing updated information on eligible equipment and suppliers, price data, key events, and the availability of support through the project and other mechanisms.

• **Business Development Support ($1.5 million GEF).** Since all participating PV companies are rather small business, it is necessary to strengthen on these capability on marketing, management and operation under market basis through a series of training activities. These activities will provide assistance to PV companies to adopt conventional business practice, and also extend their business views. Training, and technical assistance would be used to assist the PV companies to improve in the following areas: (a) financial management, contract management, accounting and auditing; (b) development of sales and after-service networks; (c) product development and quality control; (d) marketing (surveys, promotion, small demonstrations) and business development; and, (e) industry association/accreditation. Some training will take place in other countries to ensure companies to learn about international best practices. Selection of companies to participate in international training will be based on their sales performance more than one year after project start-up (e.g. a sold more than 5,000 systems in the year).

• **Consumer Financing Mechanisms ($3 million GEF)** Because of the importance of increasing affordability, funds have been tentatively designated for supporting development of financing mechanisms. As consumer financing is not available yet even in urban China, the first step is proposed to be a study of the options, by credit specialists and sociologists/anthropologists who are knowledgeable about the socio-economic situation of the people living in the areas targeted initially by the project (estimated cost: $200,000). The study would: (a) investigate financing options for different consumers; (b) recommend mechanisms for support; and, (c) recommend to the PMO an action plan. Possible support mechanisms include partial guarantees to cooperatives, PV system companies or banks; co-financing of loans from commercial banks; and limited support for pilot credit schemes by dealers.

### 3.8 Institutional strengthening sub-component

This would include: (a) product quality assurance; and (b) support for project implementation and management.

#### 3.8.1 Institutional Strengthening: Product Quality Assurance ($1 million GEF).

Quality and performance of PV systems and components (including modules, inverters, controllers, batteries and bulbs) would be improved by: (a) strengthening the testing capabilities of the Tianjin Institute of Power Sources, the National Light Sources Quality Inspection Center, and the Postal Telecommunication Industry Standardization Institute; (b) introducing national system and component standards, building upon the project standards which are currently being finalized; and, (c) assisting PV companies to improve product quality.
a) Strengthening the testing capabilities of Shanghai Institute of Space Power systems or the Tianjin Institute of Power Sources, the National Light Sources Quality Inspection Center, and the Postal Telecommunication Industry Standardization Institute. The goal of the activity is to establish qualified staff, obtain as necessary additional testing equipment, implement sound procedures and develop a program for achieving ISO 25 accreditation within about 5 years.

b) Introducing national system and component standards, building upon the project standards which are currently being finalized. Technical assistance is provided to permit the project standards to be adopted as national standards for solar home systems and for hybrids. This will the benefits of PV product quality improvements to extend beyond the project.

c) Assisting PV companies to improve product quality. Technical assistance will be provided to PV balance of systems suppliers and to PV module manufacturers to improve product quality and to institute quality assurance programs.

3.8.2 Institutional Strengthening Project Management ($1 million GEF).
TA and training, including international adviser(s) acceptable to the Bank, would be provided to strengthen the PMO’s capacity in the following areas: (a) project management, including financial management, accounting, contract management and grant processing, including verifications the systems meet the project’s technical specifications and that the companies are adhering to the consumer protection requirements; (b) reporting on progress, updating the strategy and addressing issues that arise.

The TORs for the consultants for institutional strengthening and for Program Management are in Annex N.

4. Management Structure

The Organization Chart for the PMO was given in Annex C

MOF The Ministry of Finance is the financial management agency for GEF projects in China. Usually, the project’s Special Account will be managed by MOF. For this project, there will be a transfer grant contract to be signed between the MOF and PMO. PMO will, on behalf of MOF to management the SA, disburse grant payments, and MOF will conduct internal audits of grant use and contract independent external auditors annually to audit the project accounts.

SETC/PMO The State Economic and Trade Commission (SETC) is the implementation agency for the project. A project management office (PMO) has been set up within the SETC to manage implementation. A Director of the PMO, acceptable to the Bank, will be nominated by SETC prior to effectiveness. The PMO carries out the following tasks:
- authorizes payments from the Special Account
- enters into grant agreements with PV companies
- enters into other grant agreements and contracts
- maintains the Project accounts
- issues Project financial reports
• maintains the management information system
• approve manufactures quality assurance process
• confirms whether equipment meets the project’s technical specifications
• verifies that sales and installations are in compliance with project requirements
• prepares an annual plan and budget for the sub-components for market development program support and product quality assurance
• manages the market development program support sub-component, that includes:
  − market monitoring
  − public information activities
  − support for developing the commercial capabilities of PV system companies
  − support for developing mechanisms for consumer financing, and
• manages the product quality assurance activities including
  − conducting product quality assurance initiatives, including strengthening PV modules and components testing and certification capabilities at three existing centers,
  − assisting to establish national PV component and system standards,
  − assisting to improve product quality at the company level and
  − other activities to be defined during project implementation
• monitors and reports on project implementation
• monitors and reports on PV market development
• issues periodic progress and other reports
• liaises and communicates directly with all project stakeholders, including: consumers, PV companies, suppliers, investors, testing and other technical institutions, commercial banks, other related project entities (e.g., UNDP in regard to its PV project), local and central government agencies and the Bank
• facilitates Bank supervision missions and takes follow-up actions as agreed
• prepares a mid-term review progress report in advance of an external mid-term review
• other tasks that may be assigned to it during project implementation

The PMO will be staffed with several full-time national experts, including SETC staff, and assisted by short-term national and international experts. The organization of the PMO and the responsibilities of each position see Annex C. The Terms of References of the full time staff of the PMO and a brief description of the job of key national and international experts are continued in Annex M. The key staffing and organization will be as follows:

**Director’s Office.** The PMO Office of the Director is responsible for implementation of both the PV and Technology Improvement Components. It is headed by the PMO Director who is a SETC staff member with signature authority. Day-to-day operations are led by the Executive Director of the PMO. The Executive Director, in addition to overseeing the work of the PMO, has specific and direct responsibility for heading the Financial Management, Accounting and Contract Documentation Section.
Financial Management, Accounting and Contract Documentation Section This section is responsible for maintaining the project accounts and documentation, administering all contracts and grant agreements, and maintaining the project’s management information system. This section has a key responsibility to ensure that project funds are prudently managed, that expenditures and activities are well-documented and that internal procedures and controls are in compliance with the requirements of the World Bank / GEF and the Government. This section will be staffed by full-time Accountant, Contracts Manager and Bookkeeper. The MIS services will be contracted out to a information technology company.

PV Market Development Component Section is headed by a PV Program Manager and assisted by a Deputy Manager and an Assistant. This sections consists of three subsections as noted below:

PV Sales Verification Section The Deputy Manager of the PV Section will be responsible for confirming that PV products meets the project’s technical specifications and to verify that the PV system sales for which GEF grant payments are requested by the PV companies are in compliance with project requirements. As Head of the Verification Section, the Deputy Manager will communicate with PV companies, suppliers and testing institutions. The head will be assisted by an audit firm for field audit. This section will issue notifications to companies to confirm that their equipment meets the specifications and will main an updated registry of equipment which has been confirmed as eligible for use in the project. This updated list will be openly available to all participating companies and to suppliers and others. design and execute the end-user verifications. This section has the responsibility to conduct verifications to ensure that the grants are paid to companies only for certified equipment sold to eligible customers in eligible market areas and that the consumer protection provisions, including after sales service and warranties, are honored by the companies. Most of the actual verifications conducted in the field will be done by the audit firm contracted as and when needed by the PMO. This section will follow up on complaints received from customers or others, in coordination with the institutional development section when appropriate.

Market Development Program & Institutional Strengthening Sections. The PV Component manager of the PMO will be responsible to coordinate the PMO’s market development activities. The manager will be assisted by short-term international and national advisors on PV business development. This person will also be responsible for consolidated project reporting. The PV Management Assistant will be responsible to coordinate the quality assurance activities. These sections have a key responsibility for the successful implementation of the project’s support for market development and quality improvement. It is expected that many of the tasks of market development and quality assurance will be conducted by persons or organizations contracted as and when needed by the PMO. These sections will also monitor market development, using information from various sources including the monthly sales reports of the PV companies and their annual audited reports. These sections will prepare and report on the annual program for the Market Development Program.
Senior technical advisors (STA). National and international experts, acceptable to the Bank, will be contracted by the PMO to advise on project implementation, assist maintain implementation quality, review and report on progress and issues, recommend improvements and other activities to support implementation. The major responsibility of the STA will be to assist the PMO to identify issues and develop measures to solve problems during project implementation, and other work as may be required by the PMO.

National Experts Group A national experts group (NEG) has been set since early 1997. NEG will supply some technical support during the project implementation, according to the requirement of PMO. During project preparation, NEG has supported technical standards development and the technologies development program. During the project implementation, NEG may take some responsibility to review and consult on the bidding procedures and to evaluate bid proposals. Especially, NEG will play a significant role in the technologies development program and the products quality assurance issues, including decisions to update technical standards.

PIUs Project implementation units (PIUs) may be set up in the target regions, as necessary. The role of the PIUs is to serve as the PMO local office, assisting with local coordination issues during the project implementation, especially to coordinate the financial and policies support from local authorities. PIUs can also support the PMO and local and international experts for verification activities, publicity and market development activities, as well as other work which indicated by PMO. The role of the PIU is to facilitate implementation of the project by providing the PMO with a local presence, rather than adding a layer in project implementation. The PMO will implement confidentiality procedures agreed between the PMO and the Bank.

PV Companies 17 companies have been assisted to prepare business plans for the project, and they have been accepted as participating PV companies. Other companies may enter the project later. The companies are responsible for selling PV systems in accordance with project requirements, for which they will receive GEF grant payments. The companies will report their quarterly sales performance to the PMO, and will also send the PMO copies of their audited annual financial statements. The PV companies will enter into a Sub-grant agreement with the PMO when they join the project. The sub-grant agreement is given in Annex K.

5. Performance Indicators and End of Project Targets

5.1 Project Performance Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Comment</th>
<th>Base year -1997/8</th>
<th>mid-term - 2003</th>
<th>end project 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual PV system sales in project’s market areas</td>
<td>Market development</td>
<td>50,000 units</td>
<td>100,000 units</td>
<td>339,000 units</td>
</tr>
<tr>
<td>Companies operating on</td>
<td>Market development</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
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</table>
## Project Implementation Plan

**April 22, 2001**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Comment</th>
<th>Base year - 1997/8</th>
<th>mid-term - 2003</th>
<th>end project 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>sustainable basis selling to consumer market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wp sales which meet project standards</td>
<td>Product quality improvement, implementation effectiveness</td>
<td>Not applicable</td>
<td>3 MW</td>
<td>10 MW</td>
</tr>
<tr>
<td>Average Wp size of units meeting project standards</td>
<td>Market development, product quality</td>
<td>Not applicable</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>Average Unit Costs</td>
<td>$16/Wp</td>
<td>$15/Wp</td>
<td>$13/Wp</td>
<td></td>
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<tr>
<td>Quality control mechanisms in place at PV sales companies by 2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Capabilities of 4 accredited PV testing institutes strengthened to international standards by 2001</td>
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<td></td>
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<tr>
<td>Modified project PV system standard adopted as national PV system standards by 2001</td>
<td></td>
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</tbody>
</table>
5.2 PV company performance indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Comment</th>
<th>Minimum Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sales in units, Wp, and revenue, vs forecast sales</td>
<td>Track sales growth, monitor management planning</td>
<td>20%</td>
</tr>
<tr>
<td>2. Net income without GEF / net sales</td>
<td>Profitability, management efficiency</td>
<td>2%</td>
</tr>
<tr>
<td>Net income with GEF / net sales</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>3. Net income without GEF / equity</td>
<td>Profitability, return to owners</td>
<td>7%</td>
</tr>
<tr>
<td>Net income with GEF / equity</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>4. Current ratio</td>
<td>Liquidity; current assets / current liabilities</td>
<td>2</td>
</tr>
</tbody>
</table>

6. World Bank Supervision

World Bank supervision. The supervision will be relatively heavy up to midterm, and will require assistance from the Bank’s Resident Mission in China, specially on matters related to disbursements and audits and accounts. It is expected that this would help to reduce any implementation problems as well as ensure that the PMO and PV companies’ activities are in compliance with project design and standards. There will be two supervision missions per year, initially schedules in April and October, following submissions of biannual project reports in March 15 and September 15 of each year.

7. Compliance and performance monitoring

The PMO will monitor participating companies to ensure that: (a) grant funds are being used for the intended purpose; (b) the companies are complying with pre-established technical, after sales service, and consumer protection standards; and, (c) customers are satisfied with their PV systems.

Verifying that the PV companies are complying with the project requirements is the primary responsibility of the verification section of the PMO. The PMO will act on two kinds of non-compliance. In the case of isolated incidents, the PMO will give the company the opportunity to remedy the problem within a given time limit. In the case of fraud or repeated incidents or technical and management failings, the PMO would notify the Bank and the MOF, obtain its no objection, and suspend disbursements to the company and take other actions to terminate the company’s participation in the project.
Monitoring methods for this component would include the following:

- end-user level audits of 25 systems sold by each company to ensure satisfactory product quality, before initiating grant payments;
- random, unannounced, independent end-user level audits of subsequent reported sales, as needed;\(^1\)
- customer surveys using simple, short postcards and questionnaires;
- provision of a free consumer hotline;
- small focus group sessions with companies and consumers in different regions conducted as part of the market monitoring;
- complaint based end-user audits and other data gathering in response to complaints or information received from customers or others;
- reviews of documentation and reports provided by PV companies, local and international suppliers and others;
- direct observation and verification during regular field visits;
- annual reviews of the audited financial statements submitted by each company, including counter-audits as necessary to verify information.
- performance reviews with individual companies, their accountants, auditors and commercial banks as necessary; and annual meetings with companies to discuss ways to improve the compliance monitoring system

In addition to the end-user audits and other compliance monitoring activities, the verification section of the PMO, in collaboration with the product quality assurance and market development staff, will conduct technical performance audits of PV systems or components.

8. **Reporting**

8.1 **PV companies to PMO**

The main approach for company reporting requirements is that they should be the minimum necessary to verify sales and installations for which GEF payments are made and to monitor SHS market development. Additional information gathered through company visits and reviews of the annual audited statements of the companies will be conducted by the PMO to monitor the overall progress in developing sustainable enterprises.

Quarterly, within one month of the end of the quarter, the participating PV companies will report to the PMO. The report will include three tables (see Annex J):

i. **Table Form 2 - GEF grant payment tracking report of the company’s requests to the PMO for GEF grant payments and of receipts of grant payments. (Note: All forms are in the PIP, annex K. Form 1 is used by the PV companies when submitting a grant payment request to the PMO.)**

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\(^1\) These are *ex-post* verifications done on a routine basis. This permits grant payments to the PV companies to continue without hindrance. The sampling methodology is determined by the PMO.
ii. Table Form 3 - report on company’s unit pv system sales during the period by Wp size and province. In addition to the table, the companies should indicate in text the main factors affecting their sales.

iii. Table Form 4 – report on company’s purchases of pv modules, batteries and other system components during the period.

Annually, the companies will submit to the PMO copies of their audited financial statements no later than the end of March of the following year.

8.2 PMO to IBRD

The PMO will send informal reports on a quarterly basis to IBRD, within three months of the end of the quarter. This may become a formal requirement depending on the requirements which may be agreed from time to time during implementation. The quarterly reporting is to permit the IBRD to stay abreast of progress, alert the IBRD to actions for which PMO will be requesting IBRD decisions, and provide the IBRD with an early warning of potential issues and recommendations. The process of preparing the quarterly report can also be an internal management tool for the PMO to assess progress and address implementation constraints as may be required.

The quarterly report of the PMO will consist of five tables generated by the MIS and one brief narrative statement. These are the following (see Annex J):

i. Table Form 3 (consolidated) - summary report on total pv system unit and Wp sales by size of unit and province, based on the Form 3 reports submitted by the PV companies

ii. Table Form 5 - GEF grant payment requests received and payments authorized by the PMO, by company, province, units and value

iii. Table Form 6 - GEF grant payment requests submitted and payments received by the PV companies, by company and province, in number of units and value, based on reports submitted by companies

iv. Table Form 7 – information on end user verifications completed of the pv system sales and installations, by company

v. Table Form 8 - GEF payment requests received and authorized by PMO by date

vi. statement on urgent issues and recommendations for adjustments to improve implementation performance

Biannually, the PMO will send a report to IBRD which will include the above tables and statement, plus:

vii. statement of the results and status of completed, on-going and upcoming PMO activities, including the Market Development Program and Quality Assurance Program. The format for this will be included in the PIP.

viii. statement on the main trends and factors affecting pv market development and the companies participating in the project.
ix. progress report against key performance indicators and milestone dates. The indicators are consistent with the PAD. The table for this will be included in the PIP. The indicators will include:
- cumulative systems sold
- installed MWp
- installed cost in $/Wp
- pv systems sold and operating under project in units
- pv systems sold and operating under project in MWp
- number of pv companies with satisfactory quality control systems in place.

x. PMO’s pv related current organization chart

xi. standard financial management, contracts and procurement reporting tables as agreed between IBRD Resident Mission and MOF. The financial reports will be generated by the financial MIS, which is being developed by the IBRD. The financial reporting on expenditures will follow the budget line items and sub-lines as agreed, which will be included in the PIP. These reports are:

**Financial**
- balance sheet
- statement of sources and uses of funds
- special account statement
- statement of implementation of GEF grant agreement
- Formats of financial reports see Annex J.

**Contracts**
- contract expenditure report: consultants
- contract expenditure report: goods
- Formats of contract expenditure reports see Annex J.

**Procurement**
- procurement management report: consultants
- procurement management report: goods and works
- Formats of procurement management reports see Annex J.

Annually, the PMO will issue a summary report on the financial performance of the participating PV companies. This report should be submitted to the Bank within 6 months of the reporting year end. The summary report on the financial performance of the participating PV companies. This analysis will take into account the audited financial statements submitted by the companies, data from the Project information maintained by the PMO, and information gathered during company visits, consumer and company focus groups and discussions with other knowledgeable sources, which might include representatives of commercial banks and suppliers. This report will compare estimated financial performance of the companies against the performance indicators included in the PAD.

The PMO will prepare the Project Implementation Completion Report six months before the closing date of the Project.

Contracts and procurement reports & Formats of biannual financial management report see Annex L.
9. Project Budget
The budget for the PMO, Financial management, Contracts and Accounting, and PV MDP, except TI Component are attached to this PIP as Annex E.

10. Procurement
There is no official procurement of PV systems. PV system components are procured by the PV companies. International or national competitive bidding for equipment and services—such as procurement of solar panels, batteries, light fixtures, electronic controllers—would not be feasible for the PV companies because the size of individual procurement would be too small, and the grouping of contracts is not practical due dispersal in time and location. All of the contract packages would be under $5.0 million, with the typical package in the range of $0.10-0.20 million. The typically small sizes of the individual procurement lots offer the possibility of just-in-time procurement, which reduces inventory carrying costs, and the opportunity to take advantage of low prices which are frequently available on the spot market. Efficient procurement is ensured by the competition in the project areas of multiple suppliers and multiple buyers of PV system components. For the PV companies, low cost procurement of certified equipment, especially of panels, is a key factor affecting their profitability. The PV companies are required by the competitive market conditions to follow good commercial practices, ensuring that the components and services which they purchase are procured at a reasonable price, account being taken also of other relevant factors such as time of delivery and efficiency and reliability of the goods and availability of maintenance facilities and spare parts.

Consultant and training services to be financed under the Market Development and Institutional Strengthening Sub-Components will be procured by the PMO in accordance with the current World Bank Guidelines for the Use of Consultants. All contracts will be subject to prior review and approval by the World Bank.
Annex A  Grant approval and disbursement PERT Chart
Annex B  Organizational Flow Structure of Legal Agreements and Grant Disbursements
Annex C Project Management Office - Organization Charts and Key Responsibilities
Annex D  Quality Assurance Process
Annex E  PV Component Annual Budgets
Annex F  Technology Specifications and Certification Procedures
Annex G  Project Implementation Gantt Chart
Annex I Information Required in a PV Company’s Business Plan
Annex J  Sales and Grant Report Forms
Annex K  Sub-grant Agreement between PMO and PV Company
Annex M  TOR of PMO staff, Key Contractors, and Key Experts
Annex N  TORs for Institutional Strengthening and Budgets
Annex O  First Year Plan
Annex P  List of Participating PV Companies
Annex Q  Qualified PV Components