



ASIAN PRODUCTIVITY ORGANIZATION

PROJECT IMPLEMENTATION PLAN

10 July 2015

- 1. Project Code** 15-IN-04-GE-DMP-C-04
- 2. Title** Development of Demonstration Companies
(Application of On-Grid Solar Power Systems for Promotion of Renewable Energy, Lao PDR)
- 3. Reference** Project Notification 15-IN-04-GE-DMP-C dated 20 November 2014 (This PIP replaces the PIP 15-IN-04-GE-DMP-C-01 dated 9 April 2015)
- 4. Timing and Duration** The duration of the project will be from 12 to 18 months including the dissemination period. The commencement date is scheduled for June 2015. Tentative details of the implementation schedules will be given later.
- 5. Implementing Organization** Department of Small and Medium Enterprise Promotion (DOSMEP)
- 6. Mission** The mission of an APO Productivity Demonstration Company is to convey success stories on the development and implementation of productivity improvement initiatives undertaken by all stakeholders. An APO Productivity Demonstration Company should epitomize an enterprisewide productivity movement that achieves business expansion, increases profits and customer satisfaction, reduces waste, enables energy saving, and leads to fair, equitable, mutually satisfying productivity gain-sharing for both management and workers.

7. Objectives

Under an APO Productivity Demonstration Company project, the designated National Productivity Organization (NPO) is expected to:

- a. Showcase how an on-grid solar power system can be successfully designed and installed for better energy efficiency with the commitment and participation of multiple productivity stakeholders;
- b. Demonstrate visibly and tangibly how an on-grid solar power system leads to energy savings;
- c. Illustrate the benefits of an on-grid solar power system to the national electricity supply; and

- d. Disseminate the results of the model company to inspire other organizations and stakeholders to promote the utilization of on-grid solar power systems.

8. Background

In response to the project notification for the development of demonstration companies dated 20 November 2014, DOSMEP submitted a proposal for a demonstration company project on the application of on-grid solar power systems for the promotion of renewable energy. The APO expert will guide DOSMEP and local technical experts to assess requirements and install a small modular solar power system connected to the grid.

The Lao PDR government is quite familiar with off-grid independent solar power systems. However, there are very few grid-connected systems in the country. To achieve energy efficiency and develop a diverse energy mix, it is essential to develop on-grid solar power know-how. On-grid solar power is more complicated than independent systems, because the system must be connected to the utility grid of the Lao national electricity company EDL and have the ability to supply excess power beyond consumption of the connected load to the utility grid. In addition to a set of solar panels, on-grid systems also need a plethora of supporting hardware and software to operate and monitor power generation. It is the goal of this demonstration project to acquire technological know-how in promoting on-grid solar power systems. DOSMEP will receive the necessary support from government authorities and partner with the Institute of Renewable Energy Promotion (IREP) and the Ministry of Industry and Commerce (MOIC) for this project.

Keeping in mind the commitment of DOSMEP to testing the feasibility of utilizing an on-grid solar power system for the promotion of renewable energy in Lao PDR, it is worth commissioning this project. The outcome will be widely shared and utilized as a case study in APO members and in related training programs of the NPOs and APO.

9. Collaborating Partners

This project is to be implemented in close collaboration with the following parties:

- a. The APO Secretariat (hereafter referred to as the APO);
- b. DOSMEP (hereafter referred to as the NPO);
- c. IREP;
- d. China Productivity Center (CPC), Industrial Technology Research Institute (ITRI), and Hengs Technology Co., Ltd.; and
- e. MOIC (hereafter referred to as the Demonstration Company).

10. Roles and Responsibilities

The collaborating parties will perform the following duties:

The APO

- a. Coordinate communication among the international expert(s), NPO, and demonstration company to ensure smooth implementation of the project;
- b. Identify, select, and assign the appropriate international technical expert(s) to the demonstration companies to implement productivity improvement plans and activities;
- c. Create and maintain a page on the APO website to detail the processes and progress of the demonstration company project for dissemination to the public; and
- d. Advise the NPO and demonstration company on planning and organizing a dissemination workshop for local participants and, if applicable, a multicountry observational mission for overseas participants enabling them to learn directly from the demonstration company experiences.

The NPO & IREP

- a. Appoint a coordinator from the NPO office/NPO branch office who will serve as the focal point for communication and coordinate the overall schedule for implementation of the project in the country;
- b. Provide, in addition to a coordinator, the necessary number of technical experts from the NPO to work as counterparts to the overseas expert(s) to be assigned by the APO;
- c. Facilitate and obtain tax exemption from the government of Lao PDR for all hardware and materials supplied by the CPC, ITRI, and Hengs Technology Co., Ltd in carrying out the project.
- d. Monitor closely the process of implementation, particularly the key performance areas;
- e. Measure the improvement progress at the demonstration company using quantitative data and analyses;
- f. Coordinate and supervise the company in the production of a video/DVD on the demonstration company experience;
- g. Assist and supervise the demonstration company in preparing an interim report and comprehensive final report for submission to the APO;
- h. Organize a dissemination workshop upon completion of the project to enable experience sharing and learning by the local public and/or international participants following the advice of the APO;
- i. Compile the overall activities of the project in a practical, easy-to-follow manual/guidelines so that similar exercises can be replicated by other enterprises in the country; and
- j. Prepare a final report, stressing analyses of the impact of the demonstration project on NPO activities and renewable energy promotion in the region in general, as well as

suggestions/recommendations for replication in the country with emphases on the utilization of local talent, local networks, and local resources.

- k. IREP will work as technical partner and appoint a coordinator and technical experts to work with the overseas expert(s) to be assigned by the APO; and provide necessary technical assistance to the Demonstration Company and the NPO in PV system installation, the dissemination workshop and technical manual preparation.

The CPC, ITRI, and Hengs Technology Co., Ltd.

- a. Provide hardware and materials for installing a 10 KW solar PV system;
- b. Designate a coordinator and the necessary team members to work closely with the APO, NPO, and the Demonstration Company;

The Demonstration Company

- a. Accept and facilitate consultancy services conducted by the experts assigned by the APO and counterpart experts from the NPO;
- b. Designate a coordinator and the necessary team members to work closely with the APO and NPO team of experts;
- c. Arrange for all logistical requirements relating to the project (e.g., local transportation, discussion rooms, etc.) for both the APO experts and counterpart experts from the NPO;
- d. Prepare monthly updates (including photos) for uploading on the homepage;
- e. Submit an interim report at the midterm to review the progress of implementation and identify corrections and adjustments as necessary;
- f. Videorecord from the start the process of implementation activities to produce a video/DVD upon completion of the project in association and consultation with the NPO;
- g. Announce, publicize, and prominently display the APO's presence and involvement in the demonstration company throughout the duration of the project;
- h. Share the experiences of the company with local and overseas parties who are interested in learning about solar power systems;
- i. Present the experiences in a dissemination workshop to be organized upon completion of the project; and
- j. Prepare a comprehensive final report for submission to the APO explaining the initiatives and technical details of the projects, overall analyses of the benefits, impact of the on-grid solar power system, and competitiveness gained by the company upon completion of the project.

11. Expense Sharing

The APO

- a. All expenses for assignment of the international expert(s), covering airfare, daily subsistence allowances, and overseas travel insurance;
- b. Expenses* for producing a practical manual for replication of the experience (to be prepared by the NPO) of up to US\$2,000;
- c. Expenses* for the production of a video/DVD (to be prepared by the NPO) of up to US\$3,000; and
- d. Expenses* for conducting dissemination workshops for the local public (to be arranged by the NPO) of up to US\$5,000.

*The disbursement of expenses will be made at the appropriate times corresponding to the specific activities undertaken and following submission of the necessary supporting documents under the applicable APO rules and regulations for disbursement of project expenses.

The NPO

- a. Expenses relating to the assignment of a coordinator and NPO expert(s) involved in this project.

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- a. Expenses relating to hardware and materials of the solar PV system and partial support for the NPO and Demonstration Company in installing the system.

The Demonstration Company

- a. Expenses for logistical arrangements related to the implementation of the project, including the local travel costs of the APO international expert(s), as well as for NPO experts when required due to the distance and/or location of the demonstration companies from the NPO office/branch office;
- b. Costs associated with the purchase and installation of equipment and/or fixtures relating to the implementation of the project, if any; and
- c. All other expenses for the implementation of the project not covered by the APO and/or NPO.

12. Methodology

The project will be conducted in the following three stages:

- Planning;
- Implementation; and
- Dissemination.

The planning stage is to assess the feasibility of establishing a solar power system and challenges faced in developing such a system, as well as to set the overall direction and specific goals to be achieved through the establishment of an on-grid solar power system. It will include identifying key performance areas, measurement instruments, and data to be collected to monitor and evaluate the progress. It is expected to be completed within 1–2 months.

The implementation stage is the installation of the on-grid solar power system within the campus of DOSMEP. It refers to practical, action-oriented onsite activities, with the involvement of international experts, counterpart experts from the NPOs, renewable energy expert team, and all other energy stakeholders in the country. This process is targeted to be completed in six to eight months.

The dissemination stage is to take stock of the improvement efforts and initiatives implemented and to extract the main lessons and data from them to provide a practical guide and encourage other organizations to emulate them in the future for the promotion of renewable energy. Among the main activities expected in this stage are finalization and production of a practical manual and a video/DVD and organization of a national dissemination workshop. This stage is to be completed in one to two months.

13. Project Schedule

It is expected that five visits of the APO expert will be required for this project, although the actual number and duration will be determined by the expert after the first visit in June 2015. Subsequent visits should tentatively be scheduled at intervals of two or three months in August and November 2015, and in February and May 2016. The duration of each visit should be approximately one or two weeks subject to the availability of the expert and approval by the APO.

14. Accounting Procedures

- a. In regard to the expenses for the video/DVD and training manual production, 50% of the APO share will be advanced soon after the Project Implementation Plan is signed.
- b. The remaining 50% will be paid in exchange for the video/DVD, training manual, and final project report together with the documents supporting the expenses (receipts).
- c. If a local seminar/workshop is held, 50% of the APO share will be advanced before program implementation and the remaining 50% will be paid after implementation based on supporting documents.

15. Final Project Outputs

- a. The Demonstration Company Project will be completed with the submission of the following:
- b. Final reports prepared by the NPO and demonstration company;
- c. Practical manual for replication (in video/DVD and/or printed hard copy) prepared by the NPO; and

- d. A video/DVD of the demonstration company experience to be prepared by the demonstration companies.

The APO will issue a certificate of completion and present them to the demonstration company upon completion of the project.



Mari Amano
Secretary-General