

**DOCUMENTATION ON :
APPROVED PV SERVICE PROVIDERS SCHEME
ONE-STOP PV SERVICE CENTRE**

MBIPV PROJECT

RE/ MBIPV NATIONAL PROJECT TEAM

T01- U07 & U08, 1st Floor, No. 5, Jalan P16, Precinct 16, 62150 Putrajaya, MALAYSIA

Tel. No.: 603 – 8888 5411 Fax. No.: 603-8888 5423

Email: infopv@mbipv.net.my Website: www.mbipv.net.my

Version: 2010

Table of Contents

1.0 Approved PV Service Providers Scheme.....	3
1.1 Rules for Eligibility	3
1.4 Procedures for Renewal	6
1.5 APVSP Industry Best Practice Guidelines	8
1.6 APVSP Code of Conduct.....	13
2.0 One Stop PV Service Centre	15

1.0 Approved PV Service Providers Scheme

To help develop a quality based PV industry the MBIPV Project an Approved PV Service Provider (APVSP) scheme. Only APVSP will be eligible to design and install grid connected BIPV systems for the MBIPV funded projects.

This section of the report details:

- The eligibility rules for applying to become an APVSP
- APVSP Scheme Rules
- The procedures for applications
- The procedures for renewal
- APVSP Industry Best Practice Guidelines
- APVSP Code of Conduct

The APVSP scheme will be administered by MBIPV Project.

1.1 Rules for Eligibility

The application for APVSP is administered by MBIPV Project. The applicant shall meet the following eligibility criteria.

Only companies can apply, an individual person is not eligible to be an APVSP.

- a. At least one member of staff shall have attended and successfully passed an approved ISPQ-accredited grid-connected BIPV training recognized by MBIPV/ KeTTHA.
- b. The company preferably should have prior experience in the design, supply and installation of a PV power system. If not, the company will be provisionally approved for the first 12 months.
- c. The company shall be financially sound and not declared as a dormant company under Companies Commission of Malaysia.
- d. The company shall only engage the service of a certified electrician for all electrical wiring works.
- e. The company shall have workers insurances and public liability insurance. PTM-MBIPV Project strongly recommends the APVSP to have Fidelity Guarantee Insurance.

- f. The company shall agree to follow the APVSP Industry Best Practice Guidelines.
- g. The company shall agree to abide by the APVSP Code of Conduct.
- h. The company shall state the suppliers for PV modules and Inverter

1.2 APVSP Scheme Rules

- a. A company is only approved as an APVSP for a period of one year and must renew at the end of each year following the specified renewal process.
- b. An APVSP shall act as one stop PV service centre for any enquiry relating to SURIA1000 and other financial incentive programmes administered by MBIPV
- c. At all times an APVSP must have an employee / executive director with a valid certificate from an approved ISPQ accredited BIPV training center recognized by MBIPV.
- d. The MBIPV Project might request from an APVSP information on a system that has been installed with the support of financial incentives provided through MBIPV Project. If requested, it is expected that an APVSP shall provide for that system the documentation similar to that outlined in point (I) of the APVSP Industry Best Practice Guidelines.

1.3 Procedures for Applying

An applicant will complete an application form which will require the information, as detailed in points below, to be either supplied on the form or provided as separate documents.

This application form with all relevant supporting information will be sent to MBIPV PROJECT. An applications fee of RM 100 must be sent with the application form. If successful in becoming an APVSP, the company will be sent a certificate confirming that the company is an APVSP. This approval will only be valid until 31st December of each year.

a. Company Information

A brief statement describing the company shall be given. The statement should outline the size of the company (including total number of staff) and state how many of the staff is dedicated to the PV section of the business and how many staff certified with ISPQ Grid Connected training.

b. Company Experience

The company shall provide resume of the experience that the company has had in designing, supplying and installing BIPV systems. If the company is new to the industry they can still become an APVSP but will have a provisional status for the first 12 months.

For the experienced company, the resume should include:

- How long the company has been involved in providing BIPV systems?
- List of projects done to date.
- What types of systems has the company installed (e.g. grid connected, off-grid BIPV systems, hybrid systems including PV, solar streetlights, solar water pumping systems)
- Photos of at least one system that has been installed

c. Financial Statement

Any relevant financial information, for example a copy of the latest available financial statements should be provided. Proof of company not in dormancy is required.

d. Certificate from an Approved ISPQ Accredited BIPV Training Center

Photocopies of the completion certificates must be supplied for all members of staff that have successfully completed the training course recognised by MBIPV/ KeTTHA.

e. Certificate of Electrician from Suruhanjaya Tenaga

Photocopies of the certificate issued by Suruhanjaya Tenaga for the electricians engaged in electrical wiring must be supplied.

f. Insurance

Copies of the company's workers insurance certificates and public liability insurance shall be included with the application. Optional: If company has Fidelity Guarantee Insurance (FGI), copy of the FGI certificate is also to be included.

g. APVSP Industry Best Practice Guidelines

The applicant shall sign on that application form that the company agrees to implement and follow the industry best practice guidelines.

h. APVSP Code of Conduct

The applicant shall sign on that application form that they agree to abide by all the APVSP Code of Conduct, on the understanding that failure to do so may be a basis for suspension or cancellation of APVSP status.

i. APVSP will be due for renewal on 31st December of each year.

1.4 Procedures for Renewal

APVSP

An APVPS will complete and submit a renewal form at least 2 weeks prior to their renewal date. This renewal form with all relevant supporting information will be sent to MBIPV Project along with a renewal fee. The renewal fee is based on the following PV capacity commissioned in the past 12 months.

PV Capacity Commissioned in the past 12 months	Renewal Fee per annum
nil	RM 250
0 < PV Capacity ≤ 10 kWp	RM 500
10 < PV Capacity ≤ 50 kWp	RM 750
> 50 kWp	RM1,000

The renewal form will require the following information to be supplied:

- a. Name of company
- b. Number of BIPV systems installed in previous year.
- c. Copy of APVSP membership certificate for MBIPV Project.
- d. Name of Employee who is ISPQ certified.
- e. Name of electrician who is certificated and engaged for electrical wiring.
- f. Copies of the company's workers insurance certificates and public liability insurance shall be included with the application. Optional: If the company has Fidelity

Guarantee Insurance (FGI), copy of the FGI certificate is also to be included.

- g. Authorisation letter from PV module and inverter (if necessary)

Note: At the discretion of MBIPV Project, the APVSP might be requested to provide the documents described in Clause (l) of the APVSP rules for one of their systems. If requested to provide information on a system, MBIPV Project will select the system.

Provisional APVSP

A provisional APVSP will complete and submit a renewal form at least 2 weeks prior to their renewal date. This renewal form with all relevant supporting information will be sent to MBIPV PROJECT along with a renewal fee of RM 250.

The renewal form will require the following information to be supplied:

- a. Name of company
- b. Number of BIPV systems installed in previous year.
- c. A case study of one of the systems installed providing:
 - Any documentation relating to the design of the system- if the system was designed by hand then a copy of this must be kept. If the system was designed using software then a printout of the design must be kept. The Information on the design should include as a minimum;
 - i. evidence of how the voltage windows of the array were matched with the inverters:
 - ii. whether there is any shadowing on the array and the estimated effect of these shadows.
 - iii. the size of the cables used in the array and from the array junction box to the inverter.
 - iv. the ratings of the protection devices installed
 - v. the design efficiencies allowed for including inverter, temperature effect, dirt, manufacturers tolerance and cable losses.
 - vi. the estimated yearly energy output of the system and the solar irradiation used in the calculations.
 - vii. any assumptions allowed for in your design.
 - viii. whether the system has been attached to a building earthing system

- date of commissioning
- Photos of the system, showing the array, the array junction box, the required protection devices and isolators, the required signs and the inverter.
- All the documentation as specified in Section 8 of MS1837:2005
- A copy of the testing and commissioning form.
- Copy of membership certificate for MBIPV PROJECT
- Name of Employee who has certified from an approved ISPQ accredited BIPV training center recognized by MBIPV/ KeTTHA
- Copies of the company's workers insurance certificates and public liability insurance shall be included with the application
- Authorisation letter from PV module and inverter (if necessary)

Note at the discretion of MBIPV Project, the APVSP might be requested to provide the documents described in Clause (l) of the APVSP rules for one of their systems. If requested to provide information on a system, MBIPV Project will nominate the system.

1.5 APVSP Industry Best Practice Guidelines

The APVSP Industry Best Practice Guidelines detail the actions, activities and procedures a company should apply to act as a quality company and provide customers with quality service. These include:

- a. When a person or company enquires about buying a BIPV system then an APVSP should respond to this customer either in person (by visiting or phone) or via mail (electronic or letter) within 48 hours of the enquiry being received by the company.
- b. When a site visit is undertaken the APVSP staff should undertake a thorough site visit or assessment as detailed in the training manual.
- c. When providing a quotation to a potential customer the APVSP should provide (as a minimum) the following information
 - Full specifications of the system offered (quantity, manufacturer, model number of the solar modules & inverter including the IEC or related standards complied with);
 - Warranty information relating to each of the items of equipment.
 - Minimum 1 year warranty on installation workmanship of the system;

- A firm quotation which includes all equipment and installation charges during the warranty period.
 - PV module and inverter authorization for channel distributor or resellership.
 - An estimate quotation for call-out services after the first 12 months warranty period on workmanship has expired,
 - Validity period of quotation; and
 - The quotation should be accompanied by an estimate of the yearly energy output of the system.
- d. Once the quotation is presented to the customer, the APVSP will explain about the quotation, SURIA 1000 bidding process (if the customer is interested to bid for SURIA 1000), what can be expected during pre-installation, installation and post-installation of the PV system, the warranties of equipment and workmanship, the operation and maintenance (O&M) of the PV system.
- e. Explain how a PV system works, concept of net metering for direct and indirect feed, expected energy output and the Ringgit Malaysia equivalent based on existing tariff;
- f. When a potential customer agrees to purchase a system then the APVSP should have a contract to supply, install and commission the system which is agreed with and signed by the client before proceeding. The APVSP should also sign the contract and each party (APVSP and Client) keeps a copy of the contract.
- g. If a customer is applying for financial support through the SURIA 1000 program or any other financial incentive programmes administered by MBIPV, then an APVSP will act as a one stop PV service centre and undertake in a timely and professional manner all the requirements for processing the application and installation if the applicant is successful.
- h. When installing a system an APVSP shall follow all the requirements of MS1837: 2005, Installation of Grid Connected Photovoltaic (PV) System.
- i. An APVSP should provide the customer a minimum 1 year warranty on the installation workmanship of the system in addition to the warranties offered by the manufacturers

on the equipment. All service calls, due to a system fault, within this 12 month period will be the responsibility of the APVSP unless the APVSP is able to prove that the fault was caused by the customer.

- j. An APVSP should provide support to the customer when a product fails under warranty. This support will include liaising to the manufacturer or equipment agent on behalf of the client.
- k. The APVSP should advise the customer to have fire (and theft) insurance on their system.
- l. An APVSP should keep, as a minimum, the following documentation on each BIPV system installed:
 - Any documentation relating to the design of the system- if the system was designed by hand then a copy of this must be kept. If the system was designed using software then a printout of the design must be kept.
 - The Information on the design should include as a minimum;
 - evidence of how the voltage windows of the array were matched with the inverters:
 - whether there is any shadowing on the array and the estimated effect of these shadows.
 - the size of the cables used in the array and from the array junction box to the inverter.
 - the ratings of the protection devices installed
 - the design efficiencies allowed for including inverter, temperature effect, dirt, manufacturers tolerance and cable losses.
 - the estimated yearly energy output of the system and the solar irradiation used in the calculations.
 - any assumptions allowed for in your design.
 - whether the system has been attached to a building earthing system
 - date of commissioning
 - Photos of the system, showing the array, the array junction box, the required protection devices and isolators, the required signs and the inverter.
 - All the documentation as specified in Section 8 of MS1837:2005

- A copy of the testing and commissioning form.
- m. If a customer complains to an APVSP that the system has failed then:
- If the failure occurs in the 12 month installation workmanship warranty period the APVSP
 - should respond to the complaint in a timely manner (within 24 hours if possible).
 - The customer should attempt to diagnose the problem with guidance over the phone by the APVSP. If the diagnostic is not successful, then the APVSP is obliged to visit the PV system to determine the fault and then rectifying the fault as soon as possible.
 - If it is a fault in installation workmanship then it is the APVSP responsibility to rectify the problem
 - If it is a fault in the equipment then the APVSP should liaise with the equipment manufacturer to fix the product as soon as possible. The cost for the APVSP in providing this service (i.e cost incurred in removing, returning and then re-installing the product) should either be paid for by the manufacturer or by the APVSP
 - If the failure is after the 12 month warranty period:
 - An APVSP should still provide back-up service to the customer and should respond to the complaint in a timely manner (within 24 hours if possible).
 - The customer should attempt to diagnose the problem with guidance over the phone by the APVSP. If the diagnostic is not successful, then the APVSP is obliged to visit the PV system to determine the fault and then rectifying the fault as soon as possible. A fair price should be quoted to the customer for the call-out as per agreed in advance.
 - If it a fault in installation workmanship then the APVSP should provide the customer a quotation for repairs.
 - If it is a fault in the equipment then the APVSP should liaise with the equipment manufacturer to fix the product as soon as possible. The cost in providing the repairs shall be quoted to the customer. If equipment is still under warranty the cost should just be for the time spent travelling to/from site and onsite when

undertaking the replacement (or repairs) of equipment unless this will be paid by the manufacturer.

- n. If a customer complains to an APVSP that they believe the system is not producing the energy as stated in the quotation, the APVSP should request from the customer evidence on why they have come to this conclusion. If it appears that it is producing less than anticipated then the APVSP should investigate why in a prompt and professional manner.
- o. The APVSP should attempt to solve all complaints in a professional manner and directly with the customer to avoid the complaint being formerly lodged to QAS Secretariat (MBIPV).
- p. If the complaint is formerly lodged to the QAS Secretariat (MBIPV), the APVSP should abide with the complaints procedures which is part of the Quality Assurance Scheme.
- q. If an audit is undertaken of an APVSP then the APVSP should respond to any reasonable request by the auditor in undertaking his or her duties.
- r. The company should incorporate quality management procedures in the daily operation of their business. These management procedures should be kept in a manual which could include documents such as:
 - An organisation chart (or similar) showing who is responsible for: managing the BIPV section of business; handling customer enquiries; undertaking the design of the system; providing quotations to customers; finalising the contract of sale; constructing, installing, and commissioning the systems, and customer service after system has been commissioned.
 - Job Description for each person in the company involved with the BIPV business
 - Written procedures for the activities such as:
 - Processing Customers Enquiries
 - On-site visits
 - Preparing designs and quotations
 - Purchasing equipment
 - Planning an installation and then installing and commissioning of system
 - Processing Customer Complaints
- s. The staff who undergone the installation work should have undertaken the 1 day safety

course conducted by CIDB and possess a current Green Card.

1.6 APVSP Code of Conduct

All APVSP :

- a. Shall act so as to uphold and enhance the honour, integrity and dignity of the PV Industry by associating, in their business activities, exclusively with individuals and enterprises of good character.
- b. Shall solicit work, advertise and promote their services and products with dignity and truth, avoiding any potentially misleading statements or omissions.
- c. Shall apply their skill and knowledge in the interest of their clients for whom they act as faithful agents or trustees.
- d. Shall regard as confidential any information concerning the business and technical affairs of their clients.
- e. Shall inform their clients if circumstances arise, in which their judgment or the independence of their service may be compromised by reason of business connections, personal relationships, interests or affiliations.
- f. Shall deal honestly and truthfully with clients and government agencies in all matters pertaining to payments and the conditions applying to them.
- g. Shall have their technical staff, particularly those certified by an approved ISPQ accredited BIPV training centre recognized by MBIPV/ KeTTHA, continue their professional development throughout their careers.
- h. Shall observe and conform to all relevant Malaysia Standards and all relevant MBIPV PROJECT guidelines, and all applicable laws, ordinances, regulations and codes of practice.
- i. Shall have a safety policy that relates to safe work practices when installing BIPV systems. This shall include ensuring that there is no (or minimal) damage to the local environment during the installation and that the site is left neat and tidy when installations are completed with all installation rubbish removed.
- j. Shall promptly report any apparent breach of any of the above rules by another APVSP to the MBIPV PROJECT.

- k. An APVSP should not criticise the workmanship or system design of another APVSP directly to a customer. If the APVSP believes the other APVSP has installed a poor system then a formal complaint should be lodged to QAS Secretariat (MBIPV) in accordance with the Quality Assurance Scheme.

2.0 One Stop PV Service Centre

In order to provide excellent service to applicants of SURIA1000 or any other financial incentive programmes administered by MBIPV, an APVSP shall act as a one stop PV service centre.

As a one-stop PV service centre the APVSP shall:

- a. Provide a project brief and quotation to the applicant. This brief with quotation shall include:
 - Introduction
 - Project information including name of client, location of site, contact information and relevant photographs (as applicable)
 - Overall system description including: type of installation BIPV or retrofitted, system design and expected energy output calculation
 - System quotation (break down as follows: PV modules, inverter, mounting structures, electrical works and others such as design cost etc)
 - Product brochures /technical literature
 - Warranty (to state year of warranty for major equipment) and product certification
- b. Once applicant agrees to proceed determine the bidding price with the applicant.
- c. Once the applicant agrees with the bid price and gives the APVSP the approval, the APVSP will complete and submit the SURIA1000 application form or any other financial incentive programmes administered by MBIPV on behalf of the applicant to MBIPV Project.

If applicant is successful in obtaining support through SURIA 1000 or any other financial incentive programmes administered by MBIPV the APVSP (as one stop PV service centre) shall:

- a. Obtain confirmation from applicant that they will proceed- it is recommended that there is a firm contract between the APVSP and applicant for the supply, installation and commissioning of the system. Once contract is signed then proceed with following steps.
- b. Submit application for TNB grid connection and provide a workplan to MBIPV Project.
- c. Apply for ST registration.

- d. Order equipment and plan installation.
- e. Arrange delivery and complete installation of system.
- f. Organise commissioning with applicant, MBIPV Project, TNB and PV Monitoring Centre.
- g. Submit a commissioning report to MBIPV Project and TNB.