



**DOCUMENTATION ON :
APPROVED PV SERVICE PROVIDERS SCHEME
QUALITY ASSURANCE SCHEME
ONE-STOP SHOP**

MPIA & MBIPV PROJECT



Table of Contents

1.1	Rules for Eligibility	3
1.2	APVSP Scheme Rules	4
1.3	Procedures for Applying	4
1.4	Procedures for Renewal	6
1.5	APVSP Industry Best Practice Guidelines	8
1.6	APVSP Code of Conduct	12
2.0	Quality Assurance Scheme PTM-MBIPV Project	13
2.1	Approved Auditors	14
2.2	Operational Guidelines and Procedures for Complaints	14
a.	<i>Guidelines for Owners of a BIPV System in submitting a complaint</i>	14
b.	<i>Procedures for processing complaint</i>	15
3.0	One Stop Shop.....	16

1.0 Approved PV Service Providers Scheme

To help develop a quality based PV industry the PTM-MBIPV Project together with MPIA introduced 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 MPIA.

1.1 Rules for Eligibility

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

- a. Only companies can apply, an individual person is not eligible to be an APVSP.
- b. The company must be a member of the Malaysian Photovoltaic Industry Association. (MPIA).
- c. At least one member of staff shall have attended and successfully passed an approved ISP-accredited grid-connected BIPV training.
- d. The company must have prior experience in the design, supply and installation of BIPV power systems. If not the company will have to work under a provisional approval valid for 12 months. The company must *submit the design of the BIPV system to MPIA* for validation prior to commencement of works. The *final installation shall be audited by MPIA* and all findings shall be rectified before approval is given. A chargeable rate of **RM250/hr** or **RM1500/day** plus **reimbursable expenses** shall be charged by MPIA for both of these services respectively. The above rates are subjected to review

- annually.
- e. The company shall be financially sound and not declared as a dormant company under Companies Commission of Malaysia.
 - f. The company shall have workers insurances and public liability insurance.
 - g. The company shall agree to follow the APVSP Industry Best Practice Guidelines
 - h. The company shall agree to abide by the APVSP Code of Conduct.

1.2 APVSP Scheme Rules

- a. A company is only approved as an APVSP for a period of one year and must renew each year following the specified renewal process.
- b. An APVSP shall act as one stop shop for any enquiry relating to SURIA1000 and other financial incentive programmes administered by MBIPV
- c. If the company stops being a full member of the MPIA then the company will be ineligible to remain as an APVSP.
- d. At all times an APVSP must have an employee / executive director with a valid certificate from an approved ISP accredited BIPV training center.
- e. The PTM-MBIPV Project might request from an APVSP information on a system that has been installed with the support of financial incentives provided through PTM-MBIPV Project. If requested, it is expected that an APVPS shall provide for that system the documentation similar to that outlined in point (j) of the APVPS 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 MPIA. 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 for 1 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.

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. Membership of MPIA

The company must be a member of the Malaysian Photovoltaic Industry Association and provide a copy of the membership certificate. Proof of current membership is required.

e. Certificate from an Approved ISP Accredited BIPV Training Center

Photocopies of the completion certificates must be supplied for all members of staff that have successfully completed the training course.

f. Insurance

Copies of the company's workers insurance certificates and public liability insurance shall be included with the application.

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.

1.4 Procedures for Renewal

a. APVPS

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 MPIA along with a renewal fee of RM 50.

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

- Name of company
- Number of BIPV systems installed in previous year.
- Copy of membership certificate for MPIA
- Name of Employee who is certificated.
- Copies of the company's workers insurance certificates and public liability insurance shall be included with the application

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

b. 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 MPIA along with a renewal fee of RM 50.

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

- Name of company
- Number of BIPV systems installed in previous year.
- 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;
 - 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.

- Copy of membership certificate for MPIA
- Name of Employee who has certified from an approved ISP accredited BIPV training center
- Copies of the company's workers insurance certificates and public liability insurance shall be included with the application

Note at the discretion of PTM-MBIPV Project, the APVSP might be requested to provide the documents described in Clause (j) of the APVSP rules for one of their systems. If requested to provide information on a system, PTM-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 including quantity, make (manufacturer) and model number of the solar modules and inverter.
 - Warranty information relating to each of the items of equipment.
 - An estimate of the yearly energy output of the system. This should be based on the available solar irradiation for the tilt angle and orientation of the array. If the array will be shaded at any time the effect of the shadows must be taken into account when determining the yearly energy output.
 - A firm quotation which includes all equipment and installation charges.
- d. 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.

- e. 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 shop and undertake in a timely and professional manner all the requirements for processing the application and installation if the applicant is successful.
- f. When installing a system an APVSP shall follow all the requirements of MS1837: 2005, Installation of Grid Connected Photovoltaic (PV) System.
- g. 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.
- h. 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.
- i. The APVSP should advise the customer to have fire (and theft) insurance on their system.
- j. 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.
- k. 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).
 - This response should initially involve visiting the 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).
 - This response should initially involve visiting the 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.

- If it is 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.
- l. 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.
 - m. 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 (PTM-MBIPV).
 - n. 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 (PTM-MBIPV) in accordance with the Quality Assurance Scheme.
 - o. If the complaint is formerly lodged to the QAS Secretariat (PTM-MBIPV), the APVSP should abide with the complaints procedures which is part of the Quality Assurance Scheme.
 - p. 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.
 - q. 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
- r. 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 ISP

accredited BIPV training centre, continue their professional development throughout their careers.

- h. Shall observe and conform to all relevant Malaysia Standards and all relevant MPIA 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 MPIA.

2.0 Quality Assurance Scheme PTM-MBIPV Project

The PTM-MBIPV Project implements a Quality Assurance Scheme for the investigation of complaints relating to any BIPV system installed with financial support from the PTM-MBIPV Project.

The scheme will be initially administered by PTM-MBIPV Project with the objective of being transferred to MPIA prior to 2010. The scheme will involve:

- certified auditors who will investigate the initial complaints and provide a report and
- the PV Monitoring Centre for any ongoing investigations.

2.1 Approved Auditors

The Quality Assurance Scheme will require approved auditors who will be able to undertake the initial investigations of the complaints. To become an approved auditor a person shall:

- a. have attended and successfully passed as trainer for the approved ISP-accredited Grid Connect BIPV training course.
- b. have been active in the project implementation of BIPV systems for at least one year.
- c. If the auditor is also an Approved PVSP, then the auditor shall sign declaration on code of conduct and ethics

2.2 Operational Guidelines and Procedures for Complaints

a. Guidelines for Owners of a BIPV System in submitting a complaint

The following are the procedures for submitting a complaint to QAS Secretariat (PTM-MBIPV) and the actions that are taken.

- Prior to formally complaining to QAS Secretariat (PTM-MBIPV), the complaint must first be made to the APVSP who supplied and installed the complainant's system. Only after this has been undertaken and the complainant is still not satisfied with the solution can a formal complaint be lodged
- The complaint shall be in writing and must include:
 - Name and Address of complainant
 - Exact address where the system is installed.
 - Full contact details of the complainant- (Phone, mobile, e-mail, mailing address)
 - Name of APVSP
 - Date system was commissioned.
 - Full details of the complaint.
 - Any documented correspondence between the APVSP and the customer with respect to the complaint.

- Upon receiving the complaint the QAS Secretariat (PTM-MBIPV) shall notify the complainant in writing that the complaint has been received. If further information is required this will be requested in the letter.
- The QAS Secretariat (PTM-MBIPV) will then write to the APVSP notifying them that a complaint has been received.
- Subject to the nature of the complaint, the QAS Secretariat (PTM-MBIPV) will request MPIA to appoint a certified auditor to visit the complainant's system and prepare a report.
- Cost of audit for first complaint will be borne by MPIA.

b. Procedures for processing complaint

The following are the procedures for processing a complaint when the complaint comes from a customer (system owner)

- The complaint must be received in writing and must include:
 - Name and Address of complainant
 - Exact address where the system is installed.
 - Full contact details of the complainant- (Phone, mobile, e-mail, mailing address)
 - Name of APVSP
 - Date system was commissioned.
 - Full details of the complete.
 - Any documented correspondence between the APVSP and the customer with respect to the complaint.
- Upon receiving the complaint the QAS Secretariat (PTM-MBIPV) shall notify the complainant in writing that it has been received. If further information is required this should be in the notification but a courtesy phone call should also be made explaining why this information is needed.
- Upon receiving the complaint the QAS Secretariat (PTM-MBIPV) shall immediately notify the APVSP that there has been a complaint and the nature of the complaint. Unless the complaint indicates that there has been a complete breakdown in communications between the supplier/installer and customer, the letter should request that:

- it is the interest of the APVSP to attempt to solve the complaint themselves
- the APVSP provide QAS Secretariat (PTM-MBIPV) with a written explanation providing their side of the complaint
- a copy of the documentation supplied to the customer at the time of quotation ,if not provided by the customer.
- The QAS Secretariat (PTM-MBIPV) shall then request MPIA to appoint a certified auditor who will visit the site and prepare a report.
- Cost of audit and report for first complaint shall be borne by MPIA.
- The report is then sent to QAS Secretariat PTM-MBIPV and the PV Monitoring Centre for further action subject to the conclusions of the report.
- After the complaint has been investigated and if found against the APVSP the outcome will be reported to the MPIA.

3.0 One Stop Shop

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 shop.

As a one-stop shop 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 PTM-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 shop) 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 PTM-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, PTM-MBIPV Project, TNB and PV Monitoring Centre.
- g. Submit a commissioning report to PTM-MBIPV Project and TNB.