

ELECTRICITY (SOLAR PHOTOVOLTAIC SYSTEMS) REGULATIONS, 2020

IT is hereby notified that the Minister of Energy and Power Development, in terms of section 65 of the Electricity Act [Chapter 13:19] and after consultation with the Zimbabwe Energy Regulatory Authority, has made the following regulations—

ELECTRICITY (SOLAR PHOTOVOLTAIC SYSTEMS) REGULATIONS, 2020

Part 1 - Preliminaries

Citation 1. These regulations may be cited as the Electricity (Solar Photovoltaic Systems) Regulations, 2020.

Application 2. (1) These regulations shall apply to a solar PV system manufacturer, importer, vendor, technician, contractor, system owner, a solar PV system installation and consumer devices.

(2) Where alternating current electricity is involved, the Electricity Wiring Rules, 1961 or any other subsequent rules shall apply

Definitions 3. In these regulations, unless the context otherwise requires:

a) *“advanced solar PV training”* means a course(s) covering design, installation and commissioning of grid-tied systems, grid-tied systems with storage, off-grid PV systems, DC coupled and AC coupled, Off-grid PV-Fuel hybrid;

- b) *“Authority”* means the Zimbabwe Energy Regulatory Authority established under Energy Regulatory Authority Act (Chapter 13:23);
- c) *“Act”* means the Electricity Act, 2002;
- d) *“basic solar PV training”* means a course in design, installation and commissioning of a stand-alone DC coupled system of not more than 400 W with a system voltage of 12 V.
- e) *“battery based system”* means an electrical energy supply system based on a battery without an integrated charging source or the charging source on site, and may include a single DC battery up to 250 Ah;
- f) *“consumer devices”* means off-the-shelf, readymade kits with no installation required, and may include PV lanterns, DC phone chargers, complete solar PV kits or home systems, battery chargers, fans;
- g) *“Continuing Professional Development”*, means the process of tracking and recording the learning, skills and experience a solar technician gains as they work beyond the initial training;
- h) *“contractor”* means a body corporate engaged in the design, installation and commissioning of solar PV systems;

- i) *“grid-tied system”* means a solar PV system that is connected and synchronised to an existing grid. The system feeds power into the grid reducing the load powered by the grid;
- j) *“hybrid system”* means a solar PV system incorporating other electricity generation sources such as diesel generator or wind generator;
- k) *“intermediate solar PV training”* means a course in design, installation and commissioning of a DC coupled PV system of not more than 2 kW with an auxiliary grid/generator backup through an inverter-charger with a system voltage of not more than 48 V;
- l) *“Zimbabwe Standard”* means the specification or code of practice declared by the Standards Association of Zimbabwe;
- m) *“kW”* means kilowatt;
- n) *“licensee”* means the holder of a license issues under these regulations;
- o) *“manufacturer”* means an entity that makes solar PV systems, components or consumer devices through a process involving converting or assembling of raw materials into finished solar PV systems, components or consumer devices;

- p) *“photovoltaic or PV”* means the direct conversion of sunlight into electric current;
- q) *“PV array”* means an interconnected system of PV modules that function as a single electricity-producing unit;
- r) *“revoke”* means to withdraw and invalidate a license issued under these regulations;
- s) *“solar cell”* means a solid-state device that converts the energy of sunlight directly into electricity by photovoltaic effect;
- t) *“solar PV module”* means a packaged interconnected assembly of solar cells, also known as photovoltaic cells;
- u) *“solar photovoltaic system or solar PV system”* means a system consisting of photovoltaic modules, electrical, mechanical connections and mountings, and regulating or modifying electrical output components that generate and provide electricity;
- v) *“solar PV system installation”* means a set up comprising of a solar PV system, modules and components fixed at a specific site for the provision of electricity service;
- w) *“solar PV technician or technician”* means a person licensed under these regulations to undertake the design, installation and/ or commissioning of solar PV system;

- x) *“suspend”* means to temporarily and for a defined period of time, withdraw and invalidate a license issued under these regulations;
- y) *“system design tools”* means equipment, software, spreadsheets, charts, or matrices used in the design, installation, testing and maintenance of solar PV systems;
- z) *“warranty”* means an assurance or guarantee given to the purchaser by a manufacturer or his agent stating that a product will perform as stated, is reliable and free from known defects and that the manufacturer shall, without charge, repair or replace defective parts within a given time limit and under certain conditions.

Part II – Licensing of Solar PV Technicians

Requirement for Licensing of Technicians

- 4. (1) A person shall not design, install, commission, maintain or repair a solar PV system unless he is licensed by the Authority.

- (2) To be licensed by the Authority as a technician, a person shall be required to have the prescribed education qualifications and experience as set out in the Schedule 1, and appropriate certification recognized by the Authority.

**Classes of Solar
PV Technician
Licences**

5. The Authority may, on receipt of an application, grant the applicant one of the following classes of licenses and the licensee shall be entitled to undertake work within the scope indicated along license: -

(a) **Class ST1** – Design, install, commission, maintain, and repair solar PV systems with a single inverter, single charge controller, single or multiple solar PV modules not more than 400 watts.

(b) **Class ST2** - The technician may design, install, commission, maintain, and repair:

i. solar PV systems with PV array of not more than 2 kW, a single inverter/charger connected to grid or a backup generator, a charge controller of up to 70 amperes and multiple batteries.

ii. The technician may also design, install, commission, maintain, and repair solar water pumping systems of a capacity not more than 2 kW.

(c) **Class ST3** - The technician may design, install,

commission, maintain, and repair:

i. grid-tied solar PV systems of a capacity not more than 50 kW;

ii. single phase Hybrid systems not more than 10 kW direct current coupled with a single battery inverter and the technician may connect multiple batteries, and;

iii. solar water pumping systems of a capacity not more than 50 kW.

(d) **Class ST4** – The technician may design, install, commission, maintain, and repair grid-tied or hybrid or solar water pumping systems of any capacity.

Authority may Examine Technicians

6. The Authority may cause an applicant for a technician’s license, including applicant’s for upgrading of technician’s licenses, to be examined in such manner as it may determine and upon any matter or thing in connection with the application for the purpose of ascertaining the applicant’s qualification and suitability for grant of the class of license to which the application relates.

Part III – Licensing of Contractors and Manufacturers

Requirement of Licensing of Contractors and Manufacturers

7. (1) A person shall not engage in the importation, manufacture, sale or installation of solar PV systems or solar PV system components without a valid license issued by the Authority.

(2) The Authority shall, from time to time, publish a notice setting out the types of solar PV components and solar PV systems to which this regulation applies.

Classes of Contractor and Manufacturer Licenses

8. (1) The Authority may, on receipt of an application, grant the applicant one of the following classes of licenses and the licensee shall be entitled to undertake work within the scope indicated along license: -

(a) **Class SC1** - which shall entitle the contractor to: -

- i. import and sell solar PV components provided that the solar PV module rating shall not exceed 400 watts peak and inverters shall not exceed a capacity of 400 watts.
- ii. design, install, commission, maintain, and repair solar PV systems with a single inverter charge controller, single or multiple solar PV modules not more than 400 watts.

The licensee shall be required to be, or to have in his employment a Class ST1 technician.

(b) **Class SC2** - which shall entitle the contractor to: -

- i. import and sell solar PV and solar water pumping components provided that the inverters sold or offered for sale shall not exceed a capacity of 2 kW
- ii. design, install, commission, maintain, and repair solar PV systems with PV array of not more than 2 kW, a single inverter/charger connected to grid or a backup generator, a charge controller of up to 70 amperes and multiple batteries.

- iii. design, install, commission, maintain, and repair solar water pumping systems of a capacity not more than 2 kW.

The licensee shall be required to be, or to have in his employment a Class ST2 technician.

(c) **Class SC3** - which shall entitle the contractor to: -

- i. import and sell solar PV systems and components and solar water pumping systems provided that the inverters sold or offered for sale shall not exceed a capacity of 50 kW.
- ii. design, install, commission, maintain, and repair grid-tied solar PV systems of not more than 50 kW or single phase, hybrid systems not more than 10 kW or direct current coupled with a single battery inverter and the contractor may connect multiple batteries.
- iii. design, install, commission, maintain, and repair solar water pumping systems of a capacity not more than 50 kW.

The licensee shall be required to have in his employment a Class ST3 technician.

(d) **Class SC4** - which shall entitle the contractor to manufacture or import or sell solar PV products, design, install, and commission grid-tied or hybrid or solar water pumping systems of any capacity. The

licensee shall be required to be, or to have in his employment a class ST4 technician.

- (e) **Class SM** – Which shall entitle the licensee to import parts necessary for the manufacture of solar PV components, and to manufacture and sell solar PV components and systems.

An applicant for this license shall not be required to have in his employment, a licensed solar PV technician.

- (2) Applicants for contractor licenses shall, together with their applications for licenses, submit their system design tools for approval by the Authority.

Part IV - General Provisions Regarding Licenses

Application for Licenses

10. (1) Applications for grant of the various classes of technician, contractor, or manufacturer licenses shall be made electronically or in any other manner that the Authority may, from time to time, prescribe and shall be accompanied by the information and documentation specified in Schedule 2 and proof of payment of the application fees specified in Schedule 3.

(2) The Authority shall process all applications and communicate the outcome to the applicants in writing expeditiously and in any event no later than: -

- i. sixty days from the date of receipt of the application in the case of applications for new technician's licenses or upgrades of existing technician licences.

- ii. Thirty days from the date of receipt of the application in the case of applications for new contractor and manufacturer licenses or upgrades of existing contractor licenses
- iii. Thirty days from the date of receipt of the application for applications for renewal of both technician and contractor licenses.

(3) Successful applicants shall, upon payment of the license fees specified in Schedule 3, be issued with a license document in a form that the Authority may, from time to time, prescribe.

Validity of Licenses

11. (1) Licenses issued under these regulations shall be valid for a period of three (3) years from the date of issue unless the applicant applies for a licence valid for a one (1) year period.
- (2) The application and renewal fees for one (1) year validity shall be a third of the application or renewal fees specified in Schedule 3.

Renewal of Licenses

12. (1) An application for renewal of a license shall be made thirty days prior to the date of expiry of the license.

(2) A licensed technician who wishes to renew their license shall demonstrate to the Authority accumulation of at least thirty credit points through Continuous Professional Development as outlined in Schedule 4.

(3) A licensee who makes an application for renewal of a license after its date of expiry shall be liable to the penalty set forth in regulation 27.

(4) Any license issued and is not renewed for six months after its date of expiry shall, unless the license holder has before expiry of the license informed the Authority in writing of the intention and reasons not to renew the license, not be eligible for renewal and will require the licensee to apply for the license anew.

Upgrading of Licenses

13. (1) A licensee who wishes to upgrade from one license class to another shall make an application to the authority for such an upgrade at least one (1) year after issuance of the current licence.

(2) The Authority shall approve the upgrading of a technician's license if the technician has met the required academic and professional qualifications, and practical hands-on experience as outlined in Schedule 4.

(3) The Authority shall approve upgrading of a contractor license where the contractor demonstrates that he has in his employment a licensed solar PV technician appropriate to the class of license for which the upgrade is sought.

(4) The upgrading of a license shall be subject to the licensee paying the license fee for the class of licence to which the upgrade is sought.

**Replacement of
Lost or Defaced
Licenses**

14. Where a licensee demonstrates to the Authority that a license issued under these regulations has been defaced, destroyed or lost, the Authority may, on payment of the fees prescribed in Schedule 3 issue a duplicate license.

**Suspension or
Revocation of
Licenses**

15 (1) The Authority may suspend or revoke any license issued under these regulations where it is satisfied that a licensee has breached the provisions of these regulations or any conditions attached to the license.

(2) The Authority shall, prior to suspending or revoking a license under this regulation, by notice in writing afford the licensee an opportunity to show cause why the license should not be suspended or revoked.

(3) A notice to show cause issued hereunder shall contain sufficient information to enable the licensee discern the specific incidences of non-compliance in issue.

(4) A licensee shall be entitled to appear before the Authority with or without representation to show cause why his license should not be revoked.

**Part V – Importation and Manufacture of Solar PV Systems, Components
and Consumer Devices.**

**Products to
conform to the
Zimbabwe
Standard**

16. (1) A manufacturer or importer of solar PV systems, components, and consumer devices shall ensure that the products conform to the relevant Zimbabwe Standard set out in Schedule 5 or any other subsequent or replacement standards.

(2) A manufacturer or importer of solar PV systems shall not offer for sale solar PV products, components, and consumer devices without the appropriate safety and health warning labels being affixed.

**Consumer
Devices to be
Registered with
the Authority**

17. (1) Manufacturers or importers of consumer devices shall have their products registered by the Authority on meeting the requirements of relevant Zimbabwe Standard or other equivalent International Programmes for such products. The Authority shall publish on its website other equivalent programmes for lighting products from time to time and guidelines for registration of the consumer devices.

(2) The Authority shall maintain and publish on its website a register of all approved solar lighting kits.

Products to carry Warranties 18. A manufacturer, vendor, technician, or contractor shall provide a warranty to the customer for the components in the solar PV system and the PV Installation, and consumer devices for the periods set out in Schedule 6.

Part VI - Design, Installation and Maintenance of Solar PV Systems

Requirement of System Design Declaration 19. (1) A licensed technician or contractor shall design a solar PV system to meet the requirements outlined in IEC/TS 62548 2013 or any subsequent or replacement standard.

(2) A licensed technician or contractor shall prepare a system design declaration indicating: -

- a) An analysis of the user's electrical energy needs;
- b) The specifications of the proposed solar PV solution including the brands of the components, their country of origin, capacity and number of solar modules to be installed.
- c) The full price of the installation including potential costs likely to be incurred during the installation.
- d) Layout of the area where the proposed installation is to be done.
- e) The duration of the proposed installation.
- f) Any work that is required to be done by the user to prepare the site for the installation.

(2) Where a consumer purchases any individual solar system component, the technician or contractor shall indicate that fact in the system design declaration.

(3) A system design declaration must be signed by both the technician or contractor and the consumer prior to the commencement of the installation work and a counterpart thereof given to the consumer.

**Installation
Work**

20. (1) A contractor or technician shall ensure that any solar PV installation work is carried out and complies with the relevant Zimbabwe Standard and all other relevant technical, legal and regulatory requirements applicable in Zimbabwe.

(2) Where installation work requires structural building work, the technician or contractor shall ensure that: -

a) the structural building work is undertaken by a qualified and duly registered professional.

b) any county government or national government permits and approvals required for the installation are obtained by the consumer prior to the installation work.

(3) Upon conclusion of the installation, the technician or contractor shall train the user on the safe use, maintenance, and disposal of the solar PV system.

**Certificates,
Warranty and
Documentation**

21. (1) A technician or contractor shall upon completion of installation work issue the consumer with the following documentation: -

- a) A completion certificate including a declaration that the consumer has been trained on the safe use and maintenance of the solar PV system;
- b) A warranty for the installation workmanship;
- c) The “as built” system design;
- d) The name of the manufacturer or vendor from whom the solar PV system or components were purchased;
- e) Warranties on the solar PV system or components issued by the manufacturer or vendor;
- f) User manuals with respect to the system;
- g) Instructions for the safe disposal of the system and system components in accordance with the Environment Management and Co-ordination Act, 1999 and any regulations, rules or guidelines issued thereunder with respect to the disposal of electronic waste.

(2) The technician or contractor shall ensure that a warranty issued under this part is valid for the minimum periods set out in Schedule 6 and covers: -

- a) The quality and workmanship of the installation.
- b) Compliance of the installation with the system design declaration.
- c) The quality and appropriateness of generic system components such as wires, switches and sockets.

Part VII - Register of Licensed Practitioners and Provision of Data

Authority to Maintain Register of Licensees 22. The Authority shall maintain and publish on its website a register of all licensed solar PV systems technicians and contractors.

Provision of Data 23. (1) All licensees under these regulations shall continuously provide the Authority with information on the solar PV systems installed in watts, and value of solar PV systems and components manufactured, sold and installed during the three-year license period.

(2) All technicians and contractors shall provide the Authority with information on the installed project capacity and location on commissioning of the installation.

(3) The Authority shall, from time to time, prescribe and publish the format and time durations in which the data required under this part shall be provided.

(4) All technicians and contractors shall maintain the records required under this part for a period of five years

Part VIII – Powers of Inspection and Penalties for Contravention

Powers of Inspection 24. The Authority or its agent may carry out inspection, in relation to the compliance with these Regulations, in accordance with section 11 of the Act.

Compliance Orders 25. (1) Where the Authority finds that any provisions of these Regulations have been contravened by a technician or contractor, or that a condition has arisen which may lead to the contravention of these Regulations, the Authority may issue a compliance order compelling the person to comply with the regulations.

(2) An order issued under regulation 25 shall state: -

- a) the specific provisions which have been or are likely to be contravened;
- b) the measures which should be taken to rectify the contravention; and
- c) the period within which the order shall be complied with.

Part IX – Offences and Penalties

Practising without a License 26. (1) A person who, without a license issued by the Authority:
a) undertakes the importation, manufacture, sale, design, installation, commissioning, maintenance, or repair of solar PV system

b) Undertakes importation, manufacture or sale of consumer devices commits an offence and shall, upon conviction be liable to a maximum fine of one hundred thousand Zimbabwe dollars.

(2) Where a person is charged with offences under this regulation, he may request the Authority to compound the offence and prescribe a fine to be paid and upon payment of such fine, the Authority shall withdraw any criminal complaint against the person.

(3) Where the Authority compounds an offence and the person charged with committing the offence pays the prescribed penalty, the Authority shall withdraw the criminal complaint against the person.

Other Offences and Fines 27. (1) A licensee who is found to be guilty of any of the offences listed below shall be liable to the fine or penalty indicated beside the offence.

27 (1) Offence	Fine / Penalty
a) Late renewal of a license	ZWL\$100 for every day the license is not renewed
b) Practicing with an expired license	ZWL\$500 for every day the violation occurs
c) Undertaking work in excess of the scope provided under the issued license	ZWL\$5,000 per incident
d) Offering for sale solar PV systems, components and consumer devices that do not meet the relevant Zimbabwe Standard	ZWL\$2,000 for every component that does not meet the Zimbabwe Standard.
e) Failing to provide the consumer with a system design declaration prior to commencing installation works	ZWL\$10,000 per incident
f) Failing to provide a consumer with a completion certificate with respect to an installed solar PV system	ZWL\$5,000 per incident

g) Failing to provide the consumer with a warranty covering the matters specified in the regulation.	ZWL\$10,000 per incident
h) Failing to submit data to the Authority in a manner specified in the regulation	ZWL\$10,000
i) Providing inaccurate or incomplete data to the Authority	ZWL\$5,000
j) Preventing an officer or duly notified agent of the Authority during working hours, from entering into and inspecting any premises where a licensed activity taking place or suspected to be taking place	ZWL\$5,000 for every day that the incident persists

(2) The fines or penalties in 27 (1) above are without prejudice to the Authority's right to suspend or revoke the licensee's license.

(3) Where a licensee has previously been penalised for an offence and commits another such offence, the fine payable shall be two times the amount provided for such an offence.

(4) Where installation had taken place in violation of these regulations, the responsible licensee shall decommission the installation at their own cost and where the licensee fails to do so, the Authority may cause the system to be decommissioned at the cost of such licensee.

(5) Payment of penalties or fines hereunder shall not absolve or indemnify a licensee from any obligations to compensate a consumer.

(6) Any fines or penalties which are not paid shall be a civil debt recoverable summarily.

Part X - Complains, Disputes and Appeals

**Complaints and
Disputes to be
Referred to the
Authority**

28. Any complaints and/or disputes between a consumer and a licensee or between two or more licensees shall be referred to the Authority for resolution in accordance with the Authority dispute resolutions guidelines

SCHEDULES

Schedule 1 – Qualifications and Experience for Licensing

- To be licensed as a Solar PV Technician, an applicant must have a minimum of any one of the following combinations of academic and professional qualifications, and job experience.

Class	Minimum Academic and Professional Qualifications	Minimum Experience
ST1	National Certificate in Electrical / Electronic or equivalent and Basic Solar PV Training from an accredited/reputable institution	Completion reports of at least three (3) solar PV systems each not less than 100 watts that the applicant has been involved directly.
ST2	National Diploma in Electrical and Electronics and Intermediate Solar PV Training from an accredited institution; or	(1) Completion certificates of at least three (3) solar PV systems each not less than 1 kW that the applicant has been involved directly. (2) Design documentation of at least three (3) installed systems each of at least 1 kW that the applicant has been involved directly.
	Bachelor of Science or Higher National Diploma or Diploma in Electrical and Electronics Engineering and Intermediate Solar PV Training from an accredited institution; or	
	Bachelor of Science degree with at least three (3) units/courses specific to electrical engineering and Intermediate Solar PV Training from an accredited institution	

ST3	Bachelor of Science or Higher National Diploma or Diploma in Electrical and Electronics Engineering and Advanced Solar PV Training from an accredited institution; or	(1) Completion certificates of at least three (3) grid-tied systems each 15 kW and one (1) hybrid system not less than 3 kW that the applicant has been involved directly.
	Bachelor of Science degree with at least three (3) units/courses specific to electrical engineering and Advanced Solar PV Training from an accredited institution	(2) Design documentation of at least five (5) systems each not less than 3 kW that the applicant has been involved directly.
ST4	Holder of class ST3 license and Bachelor of Science degree in Electrical and Electronics Engineering	(1) Completion certificates of at least three (3) systems each not less than 50 kW that the applicant has been involved directly. (2) Design documentation of at least five (5) systems each of not less than 50 kW that the applicant has been involved directly.

ST4 license holders shall be required to demonstrate skills in financial analysis of energy projects.

Schedule 2 – Information and Documentation to Accompany Applications for Licenses

A. Technician License

1. Solar PV training certificate from an accredited institution.
2. Complete an application form documenting all requirements
3. Completion certificates detailing the following a) System location

- b) Date system completed
 - c) System information (PV array size, number of inverters and total cumulative inverter capacity)
 - d) Name and phone number of installation contractor
 - e) Name and phone number of Applicant's supervisor
 - f) Description of work performed by the Applicant
4. Design documentation signed and stamped by the company they worked for.
 5. Non-Electrical/ Electronic certificate holders should provide proof to have undertaken adequate training in electrical engineering.
 6. Pass examination that may be administered by the Authority.

B. Contractor License

New Application requirements

1. copy of certificate of incorporation or business registration certificate;
2. copy of company registration documents i.e. CR 2, CR6 and CR14;
3. copies of identification documents (National IDs or Passports) for all the company's directors;
4. copy of a valid Work Permit for foreign directors working in Zimbabwe or notarized declaration of non-residence for foreign directors not residing in Zimbabwe;
5. copy of a valid tax clearance certificate;
6. copy of lease agreement or title deed

10. Signed consent letter between the contractor and solar PV technician attested by Commissioner for Oaths clearly indicating the engagement period that shall not be less than one (1) year;
11. Commissioning Instruments that shall be prescribed by the Authority from time to time;

Licence Renewal application requirements

1. copy of certificate of incorporation or business registration certificate;
2. copy of company registration documents i.e. CR 2, CR6 and CR14;
3. copies of identification documents (National IDs or Passports) for all the company's directors;
4. copy of a valid Work Permit for foreign directors working in Zimbabwe or notarized declaration of non-residence for foreign directors not residing in Zimbabwe;
5. copy of a valid tax clearance certificate;
6. copy of lease agreement or title deed
7. Signed consent letter between the contractor and solar PV technician attested by Commissioner for Oaths clearly indicating the engagement period that shall not be less than one (1) year;

Schedule 3 – License Fees

1. To be licensed as a solar PV system technician, the following fees shall apply:

Class of license	Application Fees (ZWL\$)	License Fees (ZWL\$)	Renewal Fees (ZWL\$)	Certificate Replacement Fees (ZWL\$)
ST1	500	1,000	2,250	500
ST2	500	2,000	3,000	500
ST3	750	3,000	4,500	500
ST4	1,500	4,000	6,000	500

2. To be licensed as a solar PV system contractor, the following fees shall apply:

Class of license	Application Fees (ZWL\$)	License Fees (ZWL\$)	Renewal Fees (ZWL\$)	Certificate Replacement Fees (ZWL\$)
SC1	1,000	2,000	3,000	1,000
SC2	2,000	3,000	4,500	1,000
SC3	3,000	5,000	6,000	1,000
SC4	4,000	7,500	9,000	1,000
SM	3,000	5,000	6,000	1,000

Schedule 4 – Continuous Professional Development

A. Licence renewal

The licensee shall accumulate a minimum of 10 credit points per year and thus, 30 points at the expiry of the license as follows:

1. Attending relevant trainings or seminars or workshops; 0.2 credit points per contact hour

2. Giving relevant seminar or training or workshop as a resource person; 0.5 credit points per contact hour
3. Presenting a paper on a relevant topic at a conference or publishing a paper in a journal; each paper 2 credit points
4. Project credit points earned through experience gained from design, installation and commissioning, operation and maintenance of solar PV projects according to the class of license as follows:

<i>License Class</i>	<i>Project credit points earned for Design or Installation or Commissioning or Maintenance or Repair</i>	<i>Project size</i>
ST1	1	Maximum 400 W
ST2	2	401 W - 2 kW
ST3	3	2.1 - 50 kW
ST4	4	Above 50 kW

The project credit points shall account for a minimum of 25 points.

B. Licence upgrade

For a licensee to upgrade a license:

1. S/he shall have met the minimum academic and professional qualifications for the license class s/he wishes to upgrade to as outlined in Schedule 1.

2. S/he shall have worked under the supervision of a licensed technician in the higher category s/he wishes to upgrade to and earned project credit points as follows:

Licence Upgrade				Project Size
From	To	Required project credit points	Project credit points earned for Design or Installation or Commissioning or Maintenance or Repair of each project under supervision	
ST1	ST2	18	2	401W-2kW
ST2	ST3	27	3	2.1 - 50kW
ST3	ST4	36	4	Above 50kW

Schedule 5 – Zimbabwe and International Standards relevant to Solar PV Systems

STANDARDS REFERENCE	TITLE
ZWS IEC 61646	Thin film terrestrial PV Modules-Design qualification and type approval
ZWS IEC 61215	Crystalline silicon terrestrial PV Modules-Design qualification and type approval
ZWS IEC 62124	PV stand-alone systems- design verification
ZWS IEC 62509	Battery charge controllers for PV systems- performance and functioning
ZWS IEC 60904-9	PV Devices-Part 9: Solar simulator performance requirements
ZWS IEC 60364-7-712	Electrical installations in Buildings Part 7-712: Requirements for special installations or locations –Solar PV power supply systems
ZWS IEC 62109-1	Safety for power converters for use in PV Power Systems-Part 1: general requirements

ZWS IEC 62109-2	Safety for power converters for use in PV Power Systems-Part 2: particular requirements for inverters
IEC 62116	Utility interconnected PV inverters-test procedure of islanding prevention measures
IEC 61683	PV power conditioners procedures for measuring efficiency
COMESA ZW HS IEC 61427:2009	Secondary cells and batteries for photovoltaic energy systems (PVES) – General requirements and methods of test
ZWS 322:1993	Photovoltaic modules
ZWS 522:1999	Batteries for use in photovoltaic systems
ZWS 523:1999	Fluorescent lights for use in photovoltaic systems
ZWS 524:1998	Charge controllers for photovoltaic systems using lead-acid batteries
ZWS 536:1998	Design, sizing and installation of battery based photovoltaic systems
IEC TS 62257-9-5	Recommendations for renewable energy and hybrid systems for rural electrification - Part 9-5: Integrated systems - Laboratory evaluation of stand-alone renewable energy products for rural electrification
IEC TS 62257-9-8	Integrated systems – Requirements for stand-alone renewable energy products with power ratings less than or equal to 350 W
IEC/TS 62548 2013:	Photovoltaic (PV) arrays – Design requirements

Schedule 6 – Minimum Warranty on Solar PV Systems and Components

Component	Warranty Period
Controller/Regulator	5 years
Inverter	5 years
Battery - Lead Acid	2 years
Battery - Lithium ion	5 years
Panels	10 years
Consumer Devices	2 years
Workmanship	1 year

APPLICATION FOR A SOLAR PV SYSTEM TECHNICIAN LICENCE

The Chief Executive Officer
Zimbabwe Energy Regulatory Authority
P.O. Box CY 308, Causeway
Harare

I, hereby apply to be licensed as a Solar PV System technician in accordance with the Electricity (Solar Photovoltaic Systems) Regulations, 2020 for the following class* of license-

- (a) **Class ST1** – Design, install, commission, maintain, and repair solar PV systems with a single inverter, single charge controller, single or multiple modules not more than 400 watts.
- (b) **Class ST2** - The technician may design, install, commission, maintain, and repair:
 - i. solar PV systems with PV array of not more than 2 kW, a single inverter/charger connected to grid or a backup generator, a charge controller of up to 70 amperes and multiple batteries.
 - ii. design, install, commission, maintain, and repair solar water pumping systems of a capacity not more than 2 kW.
- (c) **Class ST3** - The technician may design, install, commission, maintain, and repair:
 - i. grid-tied solar PV systems of a capacity not more than 50 kW;
 - ii. single phase, hybrid systems not more than 10 kW direct current coupled with a single battery inverter and the technician may connect multiple batteries, and;
 - iii. solar water pumping systems of a capacity not more than 50 kW.

**(Delete classes that do not apply)*

I commit to carry out all solar PV system sales and installation works in accordance with the Electricity (Solar Photovoltaic Systems) Regulations, 2020 and any Regulations and by-laws for the time being in force thereunder.

Purpose of Application: New Application Renewal (Please tick (✓) as appropriate)

1. Name of applicant

.....

(Block capitals, surname first)

2. Tax Clearance Certificate Number:

3. Postal Address.....

4. Email Address:

5. Telephone number(s):

6. Date of Birth:

7. Nationality:

8. Name and address of present employer, if any

.....
.....
.....

9. Name of present job.....

10. Academic qualification:

.....

a)

.....

b)

.....

11. Professional Qualification (Government Trade Test Certificate etc.):

a)

.....

b)

.....

c)

(Insert additional lines as appropriate)

12. Work experience (including apprenticeship (if any):

a)

.....

b)

.....

c)

(Insert additional lines as appropriate)

13. Do you have any knowledge of Occupational Safety and Health Regulations: Yes

No

14. Have you applied for a license in the past? Yes No If yes,

i. License No

ii. Issued on

iii. Issued by

15. Has any previous application for a licence been rejected under these regulations? Yes

No

(If Yes, give details)

.....

.....

.....

.....

16. Has any previous licence been cancelled under these regulations? Yes No (If Yes, give details)

.....

.....

.....

.....

I declare that the particulars given by me are true and accurate. I understand that it is an offence to give false information in an application for a licence.

Date: Signature of Applicant:

REFEREES

(The following details to be completed by two independent referees who must have known the applicant's ability very well, preferably in the trade)

1st Referee

I declare that the particulars given by the applicant in this form are true and correct to the best of my knowledge.

Full Name:

(Block letters, surname first)

Occupation:

.....

Postal address:

.....

.

Email Address:

Telephone number(s):

Solar PV system licence No. (If any)

.....

I have known the above person for years.

Position held at

present.....

Date.....
referee.....

Signature

of

1st

2nd referee

I declare that the particulars given by the applicant in this form are true and correct to the best of my knowledge.

Full Name:

(Block letters, surname first)

Occupation:

.....

Postal address:

.....

.

Email Address:

Telephone number(s):

Solar PV system licence No. (If any)

I have known the above person for years.

Position held at

present.....

Date..... Signature of 2nd referee.....

Form ZERA 002

**APPLICATION FOR A SOLAR PV SYSTEM CONTRACTOR/ MANUFACTURER
LICENCE**

(A separate application form must be completed in respect of each separate business establishment)

The Chief Executive Officer
Zimbabwe Energy Regulatory Authority
P.O. Box CY 308, Causeway
Harare

I/We

hereby apply to be licensed as a solar PV system contractor / vendor (delete as appropriate) in accordance with the Electricity (Solar Photovoltaic) Regulations, 2020 for the following class* of licence-

- a) **Class SC1** - which shall entitle the contractor to: -
 - iii. import and sell solar PV components provided that the maximum solar module size shall be 400 watts peak and inverters shall not exceed a capacity of 400 watts.
 - iv. design, install, commission, maintain and repair solar PV systems with a single inverter charge controller, single or multiple solar modules of a capacity not exceeding 400 watts.

The licensee shall be required to be, or to have in his employment a Class ST1 technician.

- b) **Class SC2** - which shall entitle the contractor to: -
 - i. import and sell solar PV and solar water pumping components provided that the inverters sold or offered for sale shall not exceed a capacity of 2kW watts
 - ii. design, install, commission repair and maintain solar PV systems with PV array of not more than 2 kW, a single inverter/charger connected to grid

or a backup generator, a charge controller of up to 70 amperes and multiple batteries.

- iii. design, install, commission, repair and maintain solar water pumping systems of a capacity not more than 2 kW.

The licensee shall be required to be, or to have in his employment a Class ST2 technician.

c) **Class SC3** - which shall entitle the contractor to: -

- iv. import and sell solar PV systems and components and solar water pumping systems provided that the inverters sold or offered for sale shall not exceed a capacity of 50kW.
- v. design, install, commission repair and maintain grid-tied solar PV systems of not more than 50 kW or single phase, hybrid systems not more than 10 kW or direct current coupled with a single battery inverter and the contractor may connect multiple batteries.
- vi. design, install, commission repair and maintain solar water pumping systems of a capacity not more than 50 kW.

d) **Class SC4** - which shall entitle the contractor to manufacture or import or sell solar PV products, design, install, and commission grid-tied or hybrid or solar water pumping systems of any capacity. The licensee shall be required to be, or to have in his employment a class ST4 technician. *

**(Delete classes that do not apply)*

I/ We commit to carry out all design distribution, promotion, sale and installation work for solar PV system undertaken by me/ ourselves in accordance with the Electricity (Solar Photovoltaic) Regulations, 2020 and any rules and by-laws for the time being in force thereunder.

Purpose of Application: New Application Renewal (Please tick () as appropriate)

1. Name of applicant

.....

.....

2. Details of applicant:

a) Income Tax Personal Identification Number:

b) Postal Address:

c) Email Address:

d) Telephone number(s):

e) Stand No.....Building
Name.....

f) Street/:

g) Town/County:

3. Location of business premise(s)

a)

.....

b)

.....

.

c).....

(Insert additional lines as appropriate)

4. Give full details of proprietors or partners owning business or directors/shareholders of the company, as applicable.

Name

Nationality

.....

.....

.....

(Insert additional lines as appropriate)

5. State if you are or any of your partners/directors is an un-discharged bankrupt. (If so, indicate the names).

a)

.....

b)

.....

c).....

(Insert additional lines as appropriate)

6. For new applications, certified copies of the following documents should be submitted with the application for a licence:

- a) If Zimbabwe, a copy of ID, or if non-Zimbabwean, a copy of current work permit together with copies of the passport;
- b) Relevant entry permits(s) for non-citizens;
- c) Copy of Business name Registration Certificate or Certificate of Incorporation and Memorandum and Articles of Association in case of a company (whichever is applicable).
- d) Lease agreement or letter from landlord confirming tenancy.
- e) VAT certificates.
- f) Valid Tax compliance certificate
- g) Any other document that may be required by the Commission from time to time

7. For renewal of a licence, only a photocopy of the current licence should be submitted

8. Name and address of bank(s) or financial institution(s) where the business account(s) is/are maintained

a)

b)

c)

(Insert additional lines as appropriate)

9. List of licensed Solar PV system technician(s)

Full name	Licence No.
.....
.....
.....

(Insert additional lines as appropriate)

10. Previous solar PV system work experience

.....
.....
.....

(Insert additional lines as appropriate)

11. Have you applied for a license in the past? Yes No If yes,

- i. Licence No.....
- ii. Issued on.....
- iii. Issued by.....

12. Has any previous application for a licence been rejected under these regulations? Yes No (If Yes, give details)

.....
.....
.....
.....

13. Has any previous licence been cancelled under these regulations? Yes No (If Yes, give details)

DECLARATION

I/We hereby, declare that the information I/we have provided in the application is true and accurate. I/We understand that it is an offence to give false information in an application for a licence.

Signature of Applicant Date
.....

Signature of Applicant Date
.....

Signature of Applicant
.....

Date

REFEREES

(The following details to be completed by two different and independent referees, who would vouch your competence to operate as a contractor / vendor (delete as appropriate) if licensed, your technical ability having already been established. Persons who may not understand what is involved in running a business cannot be accepted as referees).

1st Referee

I certify that the information given in this form is true and correct to the best of my knowledge

Full name.....

(Block letters, surname first)

Occupation.....

Postal address.....

Email Address:

Telephone number(s):

Date..... Signature of 1st referee.....

2nd Referee

I certify that the information given in this form is true and correct to the best of my knowledge

Full name:

(Block letters, surname first)

Occupation:

Postal address:

Email Address:

Telephone number(s):

Date: Signature of 2nd referee