

THE ENERGY ACT

(No. 12 of 2006)

IN EXERCISE of the powers conferred by sections 63 and 110 of the Energy Act, 2006, the Minister for Energy makes the following Regulations:—

THE ENERGY (SOLAR WATER HEATING) REGULATIONS, 2012

Citation.

1. These Regulations may be cited as the Energy (Solar Water Heating) Regulations, 2012.

Interpretation.

2. In these Regulations, unless the context otherwise requires—

“active solar water heating system” means a solar water heating system that employs a pump to circulate water through a solar collector to a storage tank or to the point of use;

“carbon finance” means a mechanism that facilitates the financial reward through carbon credits for the reduction of greenhouse gas emissions by emitters in developing countries;

“Clean Development Mechanism” means a mechanism that allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits each equivalent to one tonne of carbon dioxide, which can be traded or sold, or used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol;

“cogeneration” means the production of electricity and heat in one single process for dual output streams;

“direct solar water-heating system” means a solar water heating system in which water is heated directly in the collector;

“indirect solar water-heating system” means a solar water heating system in which a heat transfer fluid in the collector transfers heat to the water through a heat exchanger;

“Kenya Standard” means the specification or code of practice declared by the National Standards Council under section 9 of the Standards Act;

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“licensee” means the holder of a licence issued under these Regulations;

“Minister” means the Minister for the time being responsible for matters relating to energy;

“passive solar water heating system” means a solar water heating system that employs natural convection to circulate water through a solar collector to a storage tank or to the point of use;

“premises” means existing, new or alterations and extensions to existing residential or commercial buildings or structures, including-

- (a) small domestic houses as defined in the building code made under the Local Government Act;
- (b) all domestic dwellings or residential houses;
- (c) commercial buildings including hotels, lodges, clubs, restaurants, cafeterias, laundries, eating places and similar premises;
- (d) health institutions including hospitals, health centres and clinics and similar medical facilities;
- (e) educational institutions including universities, colleges, boarding schools and similar institutions;

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“renewable energy” means all non-fossil sources including, biomass, geothermal, small hydro-power, solar, wind, sewage treatment and plant gas;

“solar collectors” include evacuated tube collectors, and glazed and unglazed flat plate collectors;

“solar water heating system” means a device or system that uses sunlight to heat water and comprises of solar collectors, storage tanks, controls, installation hardware and fittings.

3. (1) All premises within the jurisdiction of a local authority with hot water requirements of a capacity exceeding one hundred litres per day shall install and use solar heating systems.

Installation and use of solar water heating systems.

(2) Within a period of five years from the date of coming into force of these Regulations, all existing premises with hot water requirements of a capacity exceeding one hundred litres per day shall install and use solar heating systems.

(3) A person who contravenes the provisions of this regulation commits an offence and shall, on conviction, be liable to a fine not exceeding one million shillings, or to imprisonment for a term not exceeding one year, or to both.

**Exemptions.**

4. (1) The Commission may exempt from these Regulations—

- (a) premises with technical limitations;
- (b) premises incapable of incorporating solar heating systems due to their special circumstances.
- (c) premises supplied with hot water from a cogeneration plant in or proximate to the premises;
- (d) premises utilising electricity generated from renewable energy and the excess is used to heat water as a dump load; or
- (e) such other premises as the Commission may determine.

(2) An application for an exemption under sub-regulation (1) shall be made to the Commission, in Form 1 set out in the First Schedule, before the submission of the building plans for approval to the relevant local authority.

(3) The Commission shall process an application for an exemption within forty five days of receipt thereof, and inform the applicant and the relevant local authority of its decision, in writing.

(4) The Commission shall, where it refuses to grant an exemption, give the applicant reasons for the refusal.

**Demand calculation and minimum hot water demand.**

5. (1) All premises shall have a minimum annual solar contribution of sixty per cent to the premises' hot water demand.

(2) The daily hot water demand shall be calculated using the specific hot water demand values specified in Part A of the Second Schedule.

**Responsibility for compliance.**

6. (1) A developer of a housing estate, a promoter of the construction, an owner of the premises or an Architect or an Engineer engaged in the design or construction of premises shall comply with these Regulations.

(2) An owner of premises, Architect and an Engineer engaged in the design, construction, extension or alteration of premises shall incorporate solar water heating systems in all new premises designs and extensions or alterations to existing premises.

(3) An owner or occupier of premises that has a solar water heating system shall use and carry out the necessary operational maintenance and repairs required to keep the installation in good and efficient working condition.

(4) An electric power distributor or supplier shall not provide electricity supply to premises where a solar water heating system has not been installed in accordance with these Regulations

(5) An owner or occupier to whom these Regulations apply may investigate the inclusion of the relevant solar water heating system into a project to be registered under any carbon finance mechanism that may be established from time to time including the Clean Development Mechanism (CDM).

(6) A person who contravenes the provisions of this regulation commits an offence and shall be liable, on conviction, to a fine not exceeding one million shillings, or imprisonment for a term not exceeding one year, or to both.

7. (1) The Commission or its agent may inspect premises, to investigate matters relating to the installation of solar water heating systems in premises, in accordance with section 24 of the Act.

Powers of inspection

(2) The Commission shall issue a compliance certificate, upon request, where a solar water heating system has been installed in compliance with these Regulations.

(3) Where the Commission finds that the provisions of these Regulations have been contravened by the owner or an occupier of the premises or that a condition that may lead to the contravention of these Regulations has arisen, the Commission or its agent may issue a compliance notice to the owner or occupier of the premises.

(4) A notice issued under this Regulation shall specify-

- (a) the regulation that have been contravened;
- (b) the measures that should be undertaken to rectify the contravention; and
- (c) the period within which the notice shall be complied with.

(5) A person who does not comply with a notice issued under paragraph (4) within the specified period commits an offence and shall, on conviction, be liable to a fine not exceeding ten thousand shillings for residential premises and thirty thousand shillings for all other premises for each day or part thereof that the contravention continues.

8. (1) A person shall not use or employ for the purposes of or in connection with a solar heating system, any mode, material or apparatus other than that which complies with the Kenya Standard.

Standardisation.

(2) A Solar collector shall, for the purposes of these Regulations, be of the unglazed flat plate, glazed flat plate or evacuated tube collector technologies or any other type that meets the Kenya Standards for solar collectors.

(3) A glazed, evacuated tube collector or any other type that meets the Kenya Standards for collectors shall be used in all installations except in installations for heating swimming pools where unglazed collectors may be used.

(4) Solar collector panels shall be insulated to improve their thermal efficiency performance.

(5) The storage capacity of a solar water heating system shall not be less than one and a half times the daily hot water demand of the installation.

(6) The hot water storage tanks shall be insulated.

(7) All components selected for use in the installation of a solar water heating system shall be corrosion resistant.

(8) Selection of components for plumbing works in a Solar Water Heating System shall be in accordance with the planning and building code made under the Local Government Act.

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Conventional Back-up Water Heating System.

9. (1) The backup water heater systems that utilize traditional fuels, including electricity, gas, or similar fuels, may be separately installed in buildings or be integrated into the solar heating system to ensure that there is an adequate supply of hot water at all times.

(2) The conventional back-up system shall be designed to supplement a solar water heating system by operating when absolutely necessary to supply the energy deficit from solar collectors due to adverse weather conditions or a solar water heating system defects.

Design, Installation, Repair and Maintenance.

10. (1) The design, installation, repair and maintenance of a Solar Water Heating System shall be in accordance with the Code of Practice – Solar Water Heating For Domestic Hot Water; Kenya Standard KS 1860:2008.

(2) The design, installation, repair and maintenance of a solar water heating system shall also be in accordance with the building code made under the Local Government Act.

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(3) Solar collectors shall be installed in accordance with the solar water heating system installation standards set out in Part B of the Second Schedule.

(4) A solar water heating system technician or contractor shall, upon commissioning a solar heating system, issue an installation certificate, the date of installation, capacity of the solar water heating system, details of the installer and warranty, for the premises.

Licensing of Solar Water Heating System installation work.

11. (1) A person shall not undertake any solar water heating system installation work unless the person is licensed by the Commission as a solar water heating system technician or a contractor.

(2) The Commission shall not license a person as a solar water heating system technician unless the person has-

(a) qualifications and experience specified in Part C of the Second Schedule ; and

(b) certification recognized by the Commission.

(3) The Commission shall not license a person to be a solar water heating system contractor, unless the person has in his or her employment, a licensed solar water heating system technician.

(4) A person who wishes to be licensed as a solar water heating system technician or a contractor shall make an application in Form 3A or 3B, set out in the Third Schedule.

(5) The Commission may require and cause such applicant, for the purpose of ascertaining his ability to undertake, engage in or perform any work that is related to solar water heating system installation, to be examined, in such manner as it may determine, upon any matter or thing in connection with his application.

(6) The Commission shall process all applications within ninety days from the date of receipt of the application.

(7) The Commission may, after considering an application made under paragraph (4)-

- (a) grant the licence applied for unconditionally or with such conditions as it may consider fit; or
- (b) refuse to grant the licence applied for, giving reasons thereof.

(8) A licence issued under this regulation shall be valid for a period of two years from the date of issue.

12. (1) An application for renewal of a licence shall be made at least thirty days before the expiry date of the current licence.

Renewal of licence.

(2) Where, upon application, it is shown to the satisfaction of the Commission that a licence has been lost, destroyed or defaced, the Commission may issue a duplicate licence.

13. (1) The Commission shall maintain a register of all licensed solar water heating system technicians and contractors licensed under these Regulations.

Keeping of registers and records.

(2) The register shall be available to the public for inspection.

(3) All solar water heating system technicians and contractors registered by the Commission shall maintain records of all solar water heating systems installed, specifying the location, capacity and type.

(4) All registered solar water heating system technicians and contractors shall, within the first quarter of every succeeding year, submit an annual return by the end of the first quarter of the following year of all the solar water heating systems installed in the immediately preceding year, specifying the location, capacity and type.

(5) All solar water heating system technicians and contractors shall keep and maintain a record of the reports required under these Regulations for a minimum period of five years.

(6) A person who contravenes paragraph (3) commits an offence and is liable, on conviction, to a fine not exceeding one million shillings, or to a term of imprisonment of one year, or to both.

14. The incorporation of a solar water heating system in premises shall comply with all other relevant technical, legal and regulatory requirements applicable in Kenya.

Compliance with other technical, legal and regulatory requirements.

FIRST SCHEDULE

(r. 4 (2))

FORM I

APPLICATION FOR EXEMPTION

APPLICATION FOR EXEMPTION FROM THE SOLAR WATER HEATING REGULATIONS UNDER THE ENERGY ACT, 2006

"This form must be accompanied with a technical report signed by an expert (Registered Engineer, Architect, or Technician) explaining why it is not technically viable to have Solar Water Heating System in the premises".

GENERAL PARTICULARS

State

(1) Name and address of applicant in full; in the case of a partnership or other joint venture (other than a body corporate), give the names and addresses of each party concerned .....

(2) Name, address and telephone number of person to whom correspondence or enquiries concerning the application should be directed.....

(3) State whether the applicant is a public limited company, private limited company, overseas company, other body corporate, partnership, unincorporated association, sole trader or other entity (and in the last case give particulars of the legal status).....

(2) If the applicant is a body corporate, state—

(a) the jurisdiction under which it is incorporated.....

(b) if applicable, its registered number.....

(Attach copies of Certificate of Registration, Certificate of Incorporation, Memorandum and/or Articles of Association where applicable)

(c) the full names and addresses of its current directors .....

(d) the name and registered office of any holding company (within the meaning of Section 154 of Cap 486) of the applicant.....

(3) If the applicant is neither a body corporate nor a sole trader, give the name(s) and address(es) of the person or persons in whom effective control of the applicant rests.....

(4) Where any person (other than a person whose name is given at paragraph 2(2)(d) or paragraph 2(3) above) holds 20 per cent or more of any class of the shares of the applicant, give the name and address of each such person, specifying in each case the number of shares so held and the percentage of the aggregate number of shares of that class represented thereby.....

.....

(5) Give the Land Reference Number and name and address of the local authority where the premises are situated. ....

.....

3. The grounds on which the applicant seeks exemption-

.....

4. (1) Name(s) and designation(s) of person(s) signing the application:

.....

(2) Date of application:

.....

## SECOND SCHEDULE

(r. 5)

### PART A

#### HOT WATER DEMAND CALCULATIONS

<i>Type of Building Premises</i>	<i>Specific Daily Hot Water Demand (DHWD) in litres per day at 60 °C</i>
Domestic residential houses	30 per person
Educational institutions such as colleges and boarding schools	5 per student
Health institutions such as Hospitals, Health Centres, clinics and similar medical facilities	50 per bed
Hotels, Hostels, Lodges and similar premises providing boarding services	40 per bed
Restaurants, Cafeterias and similar eating places	5 per meal
Laundries	5 per kilo of clothes



- (a) Hot Water Demand calculations at other temperatures (T) shall be adjusted for the 60 °C reference temperature. For the purposes of making the adjustment, the following equation shall be used—

The equation assumes that the cold water temperature (inlet water temperature) is 15 °C and a linear relationship. 45 °C is the difference between 60 °C and 15 °C.

- (b) For buildings with seasonal variations in hot water demand such as Hotels, game Lodges, and similar premises, the demand may be adjusted by an annual occupancy rate of factor of not less than 70%
- (c) In calculating demand, it shall be assumed that the daily hot water demand is constant, throughout the year.
- (d) In calculating demand for domestic residential houses, the number of persons shall be taken to be equal to the number of bedrooms x 1.5.
- (e) In calculating the heat load of solar water heating system, heat losses in the hot water distribution system shall be taken into account.

## PART B

### INSTALLATION STANDARDS FOR SOLAR WATER HEATING SYSTEM (r.10)

Solar collectors shall be installed at an angle between 10° and 20 ° from horizontal plane and/or facing the equator:

Provided that the solar collector area shall be increased by 10% for tilt angles of up to 30 ° and 20% for tilt angles of up to 40 ° for technical or aesthetic reasons and/or increased by 10% if the deviation from the direction of the equator is above 25 °.

## PART C

### QUALIFICATIONS AND EXPERIENCE FOR LICENSING (r. 11)

Solar Water Heating System Technicians—Minimum Education (Academic) qualifications and Professional (Job) experience

	<i>Education (Academic)</i>	<i>Professional (Job)</i>
1	A graduate Engineer	Over 2 years experience involving plumbing works
2	Higher National Diploma Engineer or equivalent	2years experience involving plumbing works
3	Government Trade Test Grade1	Over 3 years experience of work experience involving plumbing works
4	Government Trade Test Grade2	Over 6 years experience of work experience involving plumbing works

THIRD SCHEDULE

(r. 11(4))

FORM 3A

APPLICATION FOR LICENCE OF SOLAR WATER HEATING SYSTEM  
TECHNICIAN

Purpose of Application: New Application  Renewal  (Please indicate with a tick(✓))

Name in full.....

(Block capitals, surname first)

Postal Address.....

Date of Birth..... Nationality.....

Name and address of present employer, if any .....

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Name of present job.....

Academic qualification:.....

(a).....

(b).....

Professional Qualification:.....

(a).....

(b).....

Details of apprenticeship (if any): .....

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Knowledge of occupational safety and health regulations

Yes  No

Details of Solar Water Heating System installation licence held (if any)

Licence No.....

Issued on.....

Issued by.....

For the licence applied for I was at first interviewed on.....

I declare that the particulars given by me are true and correct.

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: .....

.....

Solar Water Heating System installation licence No. (if any) .....

I have known the above person for ..... years.

Position held at present.....

Date..... Signature of 1<sup>st</sup> 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: .....

.....

Solar Water Heating System installation licence No. (if any) .....

I have known the above person for ..... years.

Position held at present.....

Date..... Signature of 2<sup>nd</sup> referee.....

FORM 3B

(r. 11 (4))

**APPLICATION FOR LICENCE OF SOLAR WATER HEATING SYSTEM  
CONTRACTOR**

Purpose of Application: New Application  Renewal  (Please indicate with a tick(✓))

1. Name of contractor .....
2. Details of Contractor:
  - (a) Income Tax Personal Identification Number:.....
  - (b) Postal Address:.....
  - (c) Location of business premises:
 

Plot No..... Building Name.....

Street/Market:.....

Town/District:.....
3. Give full details of proprietors or partners owning business or directors/shareholders of the company, as the case may be.

*Name**Nationality*

.....	.....
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(any additional information should be submitted on a separate sheet of paper)

4. Certified copies of the following documents should be submitted with the application for a licence-
  - (a) If the applicant is a Kenyan, a copy of both sides of ID card or if a non-Kenyan current work permit together with copies of pages 1 and 5 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) PIN and VAT certificates.
    - (i) Valid Tax compliance certificate
    - (ii) Any other document that may be required by the Commission from time to time

**NB:** An applicant for renewal of a licence shall submit only a photocopy of the current Licence.

List of Licensed Solar Water Heating System technicians

<i>Full name</i>	<i>Licence No.</i>
.....	.....
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.....	.....
.....	.....
.....	.....

Areas where the business will operate.....  
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 .....

Previous Solar Water Heating System project or work experience .....

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

I/We hereby apply for registration as a Solar Water Heating System Contractor. We commit to carry out all installations in accordance with the Energy (Solar Water Heating) Regulations, 2011.

I/We hereby, declare that the information I/we have provided in the application is true and correct.

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 a business of contractor if registered, 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.....

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.....

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

Made on the 4th April, 2012.

**KIRAITU MURUNGI,**  
*Minister for Energy.*