

Legal Notice No.

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

THE ENERGY (SOLAR WATER HEATING) REGULATIONS, 2010

Citation	1. These Regulations may be cited as the Energy (Solar Water Heating) Regulations, 2010.
Interpretation	2 (1)In these Regulations, unless the context otherwise requires- "Act" means the Energy Act, No 12 of 2006; "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 CO ₂ , which can be traded and sold, and used by industrialized countries to a 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.
Cap 496	"Commission" means the Energy Regulatory Commission established under section 4 of the Act; "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 ;
Cap 265	"Licensee" means the holder of a licence issued under these Regulations and

the word "licensed" has a corresponding meaning ;

"Minister" means the minister for the time being responsible for 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 but not limited to-

- a) Small domestic houses as defined in the building code made under the Local Government Act;
- b) All other domestic dwellings or residential houses;
- c) Commercial buildings such as Hotels, Lodges, Clubs, Restaurants, Cafeterias, Laundries, eating places and similar premises;
- d) Health institutions such as Hospitals, Health Centres and clinics and similar medical facilities;
- e) Educational institutions such as universities, colleges, boarding schools and similar institutions;

"Renewable energy" means all non-fossil sources including, but not limited to 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"(SWH) means a device or system that uses sunlight to heat water and comprises of solar collectors, storage tanks, controls , installation hardware and fittings.

(2) In these Regulations, unless the context otherwise requires-

- (a) any reference to a numbered Regulation or Schedule is a reference to the Regulation or Schedule bearing that number in these Regulations;
- (b) any reference to a numbered paragraph is a reference to the paragraph bearing that number in the Regulation in which the reference occurs;
- (c) words importing the singular include the plural and vice versa;
- (d) and words importing a gender include any gender;

(3) Any reference to a statute shall include any statutory amendments, modification or re-enactment thereof and subsidiary legislation made thereunder.

- Installation and use of solar water heating systems in premises
3. (1) All premises within the jurisdiction of a local authority with hot water requirements of a capacity exceeding 100 litres per day shall install and use SWH.
- (2) Within a period of 5 years from the date of coming into force of these Regulations, all existing premises with hot water requirements of a capacity exceeding 100 litres per day shall install and use SWH.
- (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 a maximum term of imprisonment of one year, or to both.
- Exemptions from Solar Water Heating Regulations
4. (1) The Commission may grant an exemption from these Regulations to-
- a) Premises with technical limitations such as high rise buildings with insufficient roof area;
 - b) Premises incapable of incorporating SWH 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.
 - e) Such other premises as the Commission may determine.
- (2) An application for an exemption shall be made to the Commission before submission of the building plans for approval to the relevant local authority in the Form 1 set out in the First Schedule;
- (3). The Commission shall process all applications for an exemption within forty five days and inform the applicant and the relevant local authority;
- (4)The Commission shall, where it refuses to grant an exemption, give the applicant reasons for the refusal.
- Minimum Hot Water Demand and Demand Calculation
- 5 (1) All premises shall have a minimum annual solar contribution of 60% to the premises hot water demand.
- (2) The daily hot water demand shall be calculated using the specific hot water demand values in the Form 2 set out in the Second Schedule.
- Responsibility for Compliance with these Regulations
- 6 (1) A developer of a housing estate, a promoter of the construction, an owner of the premises or an Architect and an electro-mechanical engineer shall comply with these Regulations.
- (2) An owner, Architect and an Engineer shall incorporate SWH in all new premises designs and extensions or alterations to existing premises.

(3) An owner or occupier of premises installed with SWH shall use and carry out operation, 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 SWH has not been installed in accordance with these Regulations.

(5) To the extent that the owner is unable to independently comply with the obligation to adopt a SWH system as required under these regulations due to investment, technical, financial or other such barriers, the responsible entity shall investigate the inclusion of the relevant SWH system into a project to be registered under any carbon finance mechanism that may be in place 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, on conviction, be liable to a fine not exceeding two million shillings, or to a term of imprisonment of two years, or to both

Powers of inspection

7 (1) The Commission or its agent may carry out inspection, in relation to the installation of SWH in premises, in accordance with section 24 of the Act.

(2) The commission shall issue a compliance certificate upon request where the installed SWH system is in compliance.

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

(4) A notice issued under this Regulation shall state:

- a) the specific Regulations that have been contravened;
- b) the measures that must be taken to rectify the contravention;
- c) the period within which the notice shall be complied with.

(5) A person who contravenes a notice issued pursuant to an inspection, and after the expiry of the stipulated time, shall, on conviction, be liable to a fine not exceeding Kenya Shillings ten thousand for residential premises and thirty thousand for all other premises for each day or part thereof that the contravention continues.

Standardisation

8 (1) No person shall use or employ for or in connection with any of the purposes of SWH any mode, material or apparatus other than that which complies with the Kenya Standard.

(2) A Solar collector shall be of the unglazed flat plate, glazed flat plate or evacuated tube collector technologies or any other type as per Kenya

Standards requirement.

(3) A glazed, evacuated tube collector or any other type as per Kenya Standards requirement shall be used in all installations except installations for heating swimming pools which may use unglazed collectors.

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

(5) The storage capacity of SWH shall not be less than 1.5 times the daily hot water demand of the installation.

(6) Hot water storage tanks shall be insulated.

(7) All components selected for use in the installation of SWH shall be corrosion resistant.

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(8) Selection of components for plumbing works in SWH shall be in accordance with the planning and building code made under the Local Government.

Conventional Back-up Water Heating System

9 (1) Back up water heater systems utilizing traditional fuels, that is, electricity, gas, or similar fuels, may be installed in the buildings to ensure adequate hot water supply at all times. The backup systems may be integrated into SWH system or be separate.

(2) The conventional back-up system shall be designed to supplement SWH. It shall operate only when strictly necessary to supply the energy deficit from solar collectors due to adverse weather conditions or SWH defects.

Design, Installation, Repair and Maintenance

10(1) The design, installation, repair and maintenance of SWH 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 SWH shall also be in accordance with the building code made under the Local Government Act

(3) Solar collectors shall be installed in accordance with the SWH installation standards in Form 2A set out in the Second Schedule.

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(4) The SWH technician or contractor shall issue an installation certificate, showing as a minimum, the date of installation, capacity of the SWH, details of the installer and warranty, for the premises upon commissioning of the SWH.

Licensing of SWH installation work

11 (1) A person shall not carry out any SWH installation work unless the person is licensed by the Commission as a SWH technician or a contractor:

(2) To be licensed by the Commission as a SWH technician a person must have-

a) qualifications and experience as provided in the Form 2B set out

Second Schedule ; and

b) certification recognized by the Commission

(3) To be licensed by the Commission as a SWH contractor a person must-

(a) have in his employment, a licensed SWH technician.

(4) A person desirous to be licensed as a SWH technician or a contractor shall make an application in the Form 3 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 SWH installation work, to be examined, in such manner at it may determine, upon any matter or thing in connection with his application

(6) The Commission shall process all applications expeditiously and in any case, not later than ninety days from the date of receipt of the application, and it may-

(a) grant the licence applied for accordingly, with or without conditions as it may deem fit, or

(b) refuse to grant the licence applied for, giving reasons thereof.

(7) A licence issued under this Regulation shall be valid for two years from the date of issue.

Renewal of licence

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

Keeping of registers and records

13 (1) The Commission shall maintain a register of all licensed SWH technicians and contractors being licensed under these Regulations.

(2) The contents of the register shall be available for inspection by the public.

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

(4) All registered SWH technicians and contractors shall submit an annual return by the end of the first quarter of the following year of all the SWH systems installed specifying the location, capacity and type.

(5) All SWH technicians and contractors shall maintain any reports required under these Regulations for a minimum period of five years.

(6) A person who contravenes the provisions of paragraph (3) commits an offence and shall, on conviction, be liable to a fine not exceeding two million shillings, or to a term of imprisonment of two years, or to both

Compliance with other technical, legal and regulatory requirements

14. The incorporation of SWH in premises shall comply with all other relevant technical, legal and regulatory requirements applicable in Kenya.

General penalty

15. Where any default in or contravention of any of the provisions of these Regulations is made for which no fine or penalty is expressly stated, the person so defaulting or contravening shall, on conviction, be liable to a fine not exceeding one million shillings, or to a term of imprisonment of one year, or to both.

FORM 1 FIRST SCHEDULE - FORM OF APPLICATION FOR EXEMPTION

(Regulation 4)

**APPLICATION IN RESPECT OF AN EXEMPTION FROM SOLAR WATER HEATING
REGULATIONS UNDER THE ENERGY ACT, NO 12 OF 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 SWH in the premises".

GENERAL PARTICULARS

1. 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.

2. (1) 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:-

FORM 2

SECOND SCHEDULE – HOT WATER DEMAND CALCULATIONS

(Regulation 5)

Type of Building Premises	Specific Daily Hot Water Demand (DHWD) in litres per day at 60 °C
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-

$$D(T) = \frac{D(T_{60}) \times 45}{T - 15}$$

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 SWH system, heat losses in the hot water distribution system shall be taken into account.

FORM 2A

Regulation 10

SECOND SCHEDULE – INSTALLATION STANDARDS FOR SWH

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 °.

FORM 2B

Regulation 11

SECOND SCHEDULE — QUALIFICATIONS AND EXPERIENCE FOR LICENSING

SWH Technicians—Minimum Education (Academic) qualifications and Professional (Job) experience

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

FORM 3A

THIRD SCHEDULE – APPLICATION FOR LICENCE OF SWH TECHNICIAN

(Regulation 11)

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

1. Name in full.....
(Block capitals, surname first)
2. Postal Address.....
3. Date of Birth..... Nationality.....
4. Name and address of present employer, if any
.....
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.....
5. Name of present job.....
6. Academic qualification:.....
a).....
b).....
7. Professional Qualification:.....
a).....
b).....
8. Details of apprenticeship (if any):.....
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9. Subsequent experience in the work of a plumber (Trade Test Certificate, if any)
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.....
.....
10. Knowledge of occupational safety and health regulations
Yes No
11. Details of SWH installation licence held (if any)
 - i. Licence No.....
 - ii. Issued on.....
 - iii. Issued by.....
 - iv. 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:

.....

SWH installation licence No. (if any)

I have known the above person for years.

Position held at present.....

Date.....Signature of 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:

.....

SWH installation licence No. (if any)

I have known the above person for years.

Position held at present.....

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

FORM 3B

THIRD SCHEDULE – APPLICATION FOR LICENCE OF SWH CONTRACTOR

(Regulation 11)

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

(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.

5. List of Licensed SWH technicians

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

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

7. Previous SWH project or work experience
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.....
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.....

8. 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 SWH Contractor. We commit to carry out all installations in accordance with the Energy (Solar Water Heating) Regulations, 2010.

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.....

(ii) 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.....