

**THE ENERGY ACT
(No 12 OF 2006)**

PART I

INVITATION OF PUBLIC COMMENTS

PROPOSED REGULATIONS IN RESPECT OF SOLAR WATER HEATING

1. PURSUANT to section 110 (3) of *the Energy Act, 2006*, the Energy Regulatory Commission hereby invites members of the public to submit written comments within forty (40) days from the date of publication of this notice to the Director General, the Energy Regulatory Commission, on the proposed Regulations in respect of Solar Water Heating which are set out in Part II hereunder.
2. Comments may be hand-delivered, posted, and facsimiled or e-mailed to the Energy Regulatory Commission.
3. Physical address:
The Energy Regulatory Commission
Eagle Africa Centre
Longonot Road, Upper Hill
Nairobi
4. Postal address:
P.O. Box 42681 -00100 GPO
Nairobi
5. Facsimile Number: +254 20 2717603
6. E-mail address: info@erc.go.ke

PART II

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;

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

“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;

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

“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;

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“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 gazettelement 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 two million shillings, or to a term of imprisonment of two years, or to both.

Provided that the provisions of Regulation 3 (3) shall not apply to existing premises.

Exemptions
from Solar
Water Heating
Regulations

4. (1) The Commission may grant an exemption from these Regulations to-

a) Premises with hot water requirements not exceeding 100 litres per day;

b) Premises with technical limitations such as high rise buildings with insufficient roof area;

c) Premises incapable of incorporating SWH due to their special circumstances.

d) Premises supplied with hot water from a cogeneration plant in or proximate to the premises;

e) Premises utilising electricity generated from renewable energy and the excess is used to heat water as a dump load.

	<p>f) Such other premises as the Commission may determine.</p> <p>(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;</p> <p>(3). The Commission shall process all applications for an exemption within forty five days and inform the applicant and the relevant local authority;</p> <p>(4)The Commission shall, where it refuses to grant an exemption, give the applicant reasons for the refusal.</p>
Minimum Hot Water Demand and Demand Calculation	<p>5 (1) All premises shall have a minimum annual solar contribution of 60% to the premises hot water demand.</p> <p>(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.</p>
Responsibility for Compliance with these Regulations	<p>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.</p> <p>(2) An Architect and an Engineer shall incorporate SWH in all new premises designs and extensions or alterations to existing premises.</p> <p>(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.</p> <p>(4) An electric power distributor or supplier shall not provide electricity supply to premises that have not installed SWH in accordance with these Regulations.</p> <p>(5) 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</p>
Powers of inspection	<p>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.</p> <p>(2) 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.</p> <p>(3) A notice issued under this Regulation shall state:</p> <ul style="list-style-type: none"> a) the provisions of the Regulations that have been contravened; b) the measures that shall be taken to rectify the contravention; c) the period within which the notice shall be complied with. <p>(4) A person who contravenes a notice issued pursuant to an inspection, and</p>

after the expiry of the stipulated time, shall, on conviction, be liable to a penalty 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	<p>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.</p> <p>(2) A Solar collector shall be of the unglazed flat plate, glazed flat plate or evacuated tube collector technologies.</p> <p>(3) A glazed and evacuated tube collector shall be used in all installations except installations for heating swimming pools which may use unglazed collectors.</p> <p>(4) Solar collector panels shall be insulated to improve their thermal efficiency performance.</p> <p>(5) SWH may be active or passive, direct or indirect.</p> <p>Provided that for water heating systems with a hot water demand of a capacity exceeding 1000 litres per day, an active system shall be required and in the case of a hot water demand of a capacity not exceeding 1000 litres per day, a passive system may be used.</p> <p>(6) The storage capacity of SWH shall be equal to or more than 1.5 times the daily hot water demand of the installation.</p> <p>(7) Hot water storage tanks shall be insulated.</p> <p>(8) All components selected for use in the installation of SWH shall be corrosion resistant.</p>
Cap 265	<p>(9) Selection of components for plumbing works in SWH shall be in accordance with the planning and building code made under the Local Government.</p>
Conventional Back-up Water Heating System	<p>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 back up systems may be integrated into SWH system or be separate.</p> <p>(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.</p>
Design, Installation, Repair and Maintenance	<p>10 (1) Solar collectors shall be installed at an angle between 10° and 20 ° from horizontal plane and/or facing the equator:</p> <p>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 °.</p> <p>(2) The design, installation, repair and maintenance of SWH shall be in</p>

accordance with the Code of Practice – Solar Water Heating For Domestic Hot Water; Kenya Standard KS 1860:2008

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

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) a minimum of Grade 2 level of training in plumbing or welding works; and

(b) a minimum of 3 years experience in plumbing or welding works

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

(a) have in his employment, a licensed SWH technician; and

(b) be registered by the Ministry of Public Works

(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, and such application shall be accompanied by application fees of Ksh 500 for SWH technicians and Ksh 1,000 for contractors.

(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 as 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 the application, and it may-

(a) grant the licence applied for accordingly, either without conditions or subject to such 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 and must be accompanied by the applicable fee.

(2) A person who contravenes paragraph (1) shall be liable to a penalty equivalent to twenty five percent of the applicable fee.

(3). 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 upon payment of the applicable fee.

Keeping of registers and records	<p>13 (1) The Commission shall maintain a register of all licensed SWH technicians and contractors for the time being licensed under these Regulations.</p> <p>(2) The contents of the register shall be available for inspection by the public.</p> <p>(3) All SWH technicians and contractors registered by the Commission shall be required to keep records of all installed solar water heating systems, specifying the location, capacity and type</p> <p>(4) 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</p>
Compliance with other technical, legal and regulatory requirements	<p>14 The incorporation of SWH in premises shall comply with all other relevant technical, legal and regulatory requirements applicable in Kenya.</p>
General penalty	<p>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.</p>

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

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-

$$D(T) = D(T60) \times (T-15)/45$$

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, through out 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 plus one.

(e) In calculating the heat load of SWH system, heat losses in the hot water distribution system shall be taken into account.

FORM 3A

THIRD SCHEDULE – APPLICATION FOR LICENCE OF SWH TECHNICIAN

(Regulation 11)

The Director General
Energy Regulatory Commission
P.O. Box 42681 00100, GPO
NAIROBI

I, hereby apply to be licensed as a
SWH technician in accordance with the Energy (Solar Water Heating) Regulations, 2010.

I promise to carry out SWH installation works undertaken by me strictly in accordance with the
Energy Act, No 12 of 2006 and any Regulations and by-laws for the time being in force thereunder.

Name in full.....

(Block capitals, surname first)

Postal Address.....

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

Name and address of present employer, (if any)

.....

Name of present job.....

Experience and Qualifications-

Details of educational qualifications and examinations passed.....

.....

(b) Details of apprenticeship (if any)

(c) Subsequent experience in the work of a plumber or a welder (Trade Test Certificate, if
any).....

Knowledge of Rules:

Occupational Safety and Health Regulations Yes/No

Details of SWH 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

A postal order No..... dated.....

For Shs..... being the application fee is enclosed.

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

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:

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)

The Director General
Energy Regulatory Commission
P.O. Box 42681 00100, GPO
NAIROBI

I/We.....
.....

hereby certify that I/we intend to conduct the business of SWH contractor at premises/branch occupied by me/us situated at.....

Description of the premises:

Town.....

Location/name of the Road.....

Name of the Building.....

Whether it is a Branch.....

Available office and storage area.....

Details of Business

Business registration No and date.....

Postal address.....

Names of partners, their addresses and nationalities.....

Licensed SWH technicians who will direct SWH installation work:

Full name	Licence No
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.....

Areas where the business will operate

Previous experience in estimating and costing of SWH projects.....

Previous experience in SWH installation work.....

Capital available for operating the business Kshs.....

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

Details of the tools and measuring and testing instruments available:

(a) List of tools.....

(b) List of measuring and testing instruments.....

Description	Make	Serial No.
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.....

I/We hereby apply for registration of the above mentioned SWH Contractor in accordance with the Energy (Solar Water Heating) Regulations, 2010 and undertake to carry out all work undertaken by me/us strictly in accordance with the *Energy Act No 12 of 2010* and any Regulations and by-laws for the time being in force there-under.

I/We hereby, declare that the information I/we have provided in the application is true and correct.
Cheque or postal order No..... dated..... for
KShs..... being
the application fee is enclosed and agree to pay the inspection fee and the initial registration fee,
as and when required.

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

Dated the 24th June, 2010

ENG. KABURU MWIRICHIA
Director-General
Energy Regulatory Commission