

# Frequently Asked Questions (FAQs)

## Request for Variance from Mandatory Solar Water Heater Law

As of January 1, 2010, ALL NEW single-family dwellings built in the State of Hawaii are required to have a solar water heater (Act 204, June 26, 2008, now Hawaii Revised Statutes (HRS), Chapter 196-6.5).

This law does NOT apply to duplexes, triplexes, condos, or other multi-family dwellings.

If your building plans do not include a solar water heater, then you must request a "variance" (exemption) from this state law. Submit a "Request for Variance from Mandatory Solar Water Heater" to the Energy Division of the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT). This form must be signed and stamped by a professional architect or mechanical engineer licensed to do business in the State of Hawaii (Hawaii Revised Statutes Chapter 464).

**Please go to the following web site for the forms needed or questions about the variance:**

<http://energy.hawaii.gov/resources/solar-water-heater-variance>

There are links to the Request for Variance form and, if needed, the accompanying life cycle cost comparison (LCC) worksheet. Completed, stamped and signed Requests and LCC comparison worksheets should be e-mailed to [DBEDT.SWH-Variance@hawaii.gov](mailto:DBEDT.SWH-Variance@hawaii.gov) (please put "SWH Variance" in subject box).

## Frequently Asked Questions (FAQs)

- 1. I do not want to install a solar water heater on my new Hawaii home. Where do I get a Request for Variance from Mandatory Solar Water Heater Law?**

Go to the following website:

<http://energy.hawaii.gov/resources/solar-water-heater-variance>

- 2. To whom do I submit the Request for Variance from Mandatory Solar Water Heater?**

Completed, stamped, and signed Requests should be e-mailed to:

[DBEDT.SWH-Variance@hawaii.gov](mailto:DBEDT.SWH-Variance@hawaii.gov) (please put "SWH Variance" in subject box).

You may also send the completed Request to the State via the U.S. Postal Service to:

Mr. Dean Masai  
SWH Variance  
DBEDT Energy Division  
P.O. Box 2359  
Honolulu, HI 96804-2359

- 3. If I do not want to install a solar water heater on my new home, what are my options?**  
There are three options (justifications), all of which must be requested with the Request form described above, and approved by the DBEDT Energy Program Administrator:

- a. **OPTION #1:** Use a **regular gas water heater, electric resistance water heater, or heat pump water heater.** An architect or mechanical engineer licensed by the State of Hawaii must complete the form to demonstrate that using these devices are more cost effective than a solar water heater. To do this, the architect or mechanical engineer must complete the "Life Cycle Cost Comparison" (LCCC) worksheet, which is on the website listed in paragraph 1. The LCCC must show that the life cycle cost of a solar water heater is more than that of the other methods for heating water in your home.

The cell in the "solar savings fraction" allows for estimation of the amount of sun light on a property. **EXAMPLE:** The default value is 90, as a properly oriented and sized solar water heater in Hawaii, which is exposed to sunshine from 9 a.m. to 3 p.m., is assumed to be able to provide an average of 90% of the hot water used by the household. A "solar day" is 9 a.m. to 3 p.m.; shading outside of those hours is assumed not to affect the solar water heater's functioning, since very little heat is acquired in the early morning or late afternoon hours. If your building experiences shading, the number entered in this cell should reflect the amount of shading. For example, if your solar collector will be shaded 20% of the time between 9 a.m. and 3 p.m., enter 72 instead of 90 (20% of 90 is 18; subtract 18 from 90 to get 72). In another example, if your solar collector will be shaded 50% of the hours between 9 a.m. and 3 p.m., enter 45 (half of 90).

Shading could be caused by trees, neighboring structures, or mountains. Do not try to account for cloud cover as "shading." Cloud cover is taken into account when your system is sized.

The LCCC must be included with the Request form. It must be signed and stamped by an architect or mechanical engineer licensed to do business in the State of Hawaii, and sent to the e-mail or USPS address listed in paragraph 2, above.

- b. **OPTION #2:** Power your home with a **renewable energy technology** (as defined in Hawaii Revised Statutes 235-12.5):
- 1) Photovoltaic system
  - 2) Solar Thermal
  - 3) Wind

ON THE FORM, CIRCLE THE TECHNOLOGY YOU WILL INSTALL.

- c. **OPTION #3:** Install a **gas-powered, tankless, instantaneous (on-demand) water heater.** **If you choose this option, you must also install at least one additional gas-powered appliance.**

**Electric-powered on-demand water heaters are NOT allowed as an option.**

When the Request is approved, it will be sent to whomever submitted it.

4. **If I choose to have a gas, tankless, instantaneous (on demand) water in my new home instead of a solar water heater, am I required to also install another gas appliance?**

Yes, at least one additional gas appliance must be installed in your home if you choose the gas, tankless, instantaneous water heater option (Option #3), and **it must be listed on the Request form on the line under Option #3.**

5. **Must the Request be completed by a licensed architect or licensed mechanical engineer?**

Yes. The Request must be signed by a licensed architect or licensed mechanical engineer authorized to do business in the State of Hawaii according to Hawaii Revised Statutes Chapter 464. He/she must also stamp the Request with his/her architect/engineer stamp.

Please be sure that the architect or mechanical engineer prints the Request on his/her **letterhead** so he/she can be contacted later if there are questions regarding the Request.

6. **Can another type of engineer substitute for a mechanical engineer?**

No. The only engineer authorized by State law to sign and stamp the Request is a MECHANICAL engineer licensed under Hawaii Revised Statutes Chapter 464.

7. **Is it required that the architect or mechanical engineer who designed my home to also complete the SWH Variance Request?**

No. Any architect or mechanical engineer licensed to do business in the State of Hawaii may complete the SWH Variance Request for you.

Just make sure the Request is printed on the **letterhead** of the professional who signs and stamps the Request so that the State can contact him/her if there are questions.

8. **Is it okay for the homeowner or another person to submit the SWH Variance Request?**

As long as the Request is signed and stamped by an architect or mechanical engineer licensed to do business in the State of Hawaii, and the Request is printed on his/her letterhead, anyone can submit the Request to the State for approval.

When the Request is approved, it will be sent to whomever submitted it.

9. **Must the solar water heater variance request be printed on the company letterhead of a licensed architect or licensed mechanical engineer?**

Yes. HRS Chapter 196-6.5 (b) states: "A request for a variance shall be submitted to the coordinator on an application prescribed by the coordinator ...."

The template provided by the DBEDT Energy Division is the "application prescribed by the coordinator." Therefore, the template must be used when requesting a solar water heater variance.

The variance request template should be printed on the architect's or mechanical engineer's letterhead so that he/she can be contacted in case there is a question or problem with the variance request.

The template is in Microsoft "Word," and the phrase at the top, "(MUST BE ON ARCHITECT'S OR MECHANICAL ENGINEER'S LETTERHEAD)," can be deleted before printing it on the letterhead.

After printing the Request on the architect's or mechanical engineer's letterhead, the Request can be completed, signed and stamped by the professional, then sent to an address listed in paragraph 2, above.

**10. What happens after the Request is approved?**

When the Request is approved, it will be sent back to whomever submitted it.

**It is the responsibility of the architect or mechanical engineer who signed and stamped the Request, the homeowner, the developer, or the builder to submit a copy of the approved Request to the county.**

**11. How do I know if the gas, tankless water heater I want to install is “UL-certified?”**

The Underwriters Laboratories, Inc., label is usually printed on the box, water heater, instructions manual, brochure, or specification sheet. Check with the manufacturer and keep printed evidence that the model you are using is UL-certified.

The UL website lists companies that have UL-certified, gas, tankless water heaters:

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html>

- a. Type LUVK into the “UL Category Code” box
- b. Click on “Search” button.
- c. The next UL “Online Certifications Directory” page lists companies that make UL-certified instantaneous gas water heaters. The names are linked to lists of the UL-certified gas tankless water heaters. Some of the water heaters are for commercial buildings, so be careful ....

**12. How can I find a “UL-certified” gas-powered, tankless water heater?**

Go to the UL website listed above in paragraph 11.

**If you cannot find a UL-certified gas, tankless water heater**, install a gas tankless water heater that has some kind of North American safety certification, such as CSA, or other Nationally Recognized Testing Laboratory (NRTL) member.

**13. When do I use the “Water Heating Life Cycle Cost Comparison” spreadsheet?**

A licensed professional must complete this spreadsheet if you choose Option 1 on the Request (refer to paragraph 3.a. above). If you want to install a regular gas, electric or heat pump water heater, a licensed architect or mechanical engineer must show that installing a solar water heater is impractical due to poor solar resource, and/or solar is not cost effective based upon the Life Cycle Cost Comparison (LCCC) worksheet. The LCCC worksheet will automatically calculate when using a computer with the Microsoft “Excel” application.

Send the LCCC with the Request for Variance to the State at the e-mail or USPS address in paragraph 2 above.

**14. Where do I find the “Water Heater Life Cycle Cost Comparison” worksheet?**

<http://energy.hawaii.gov/resources/solar-water-heater-variance>

**15. How long does it take for a Request to be processed?**

Usually about two weeks, depending upon holidays or other workload involved, but the law gives DBEDT **30 working days** to respond.

**16. Where can I get a copy of the Hawaii State Law that mandates solar water heaters on all new Hawaii homes beginning January 1, 2010?**

[http://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0196/HRS\\_0196-0006\\_0005.htm](http://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0196/HRS_0196-0006_0005.htm)

**17. How do I find out the specifications for a solar water heater system in Hawaii?**

The specifications for a solar water heater system in Hawaii were developed by the State of Hawaii Public Utilities Commission (PUC). Please see the following PUC web sites:

- a. PUC page listing all the links regarding SWH standards:  
<<http://puc.hawaii.gov/energy/residential-solar-water-heating-systems-standards>>
- b. Specific standards: "Docket No. 2008-0249, Decision and Order," the actual standards begin in Exhibit 1, page 36, of the PDF:  
<<http://puc.hawaii.gov/wp-content/uploads/2013/06/Decision-and-Order-Issued-on-Oct-29th-2009.pdf>>

The "Solar Collector BTU/Day Output by Hawaii Sunshine Zone, Attachment A," which begins on page 56 of the PDF, was updated in the link entitled, "Agreed-Upon Revised Output Tables, Updated November 30, 2009 ....": <<http://puc.hawaii.gov/wp-content/uploads/2013/06/Updated-Output-Tables.pdf>>

**18. If I have more questions, who do I ask for help?**

Send your questions to this e-mail address: [DBEDT.SWH-Variance@hawaii.gov](mailto:DBEDT.SWH-Variance@hawaii.gov) (please put "SWH Variance" in subject box)

If your question(s) is not answered in this FAQ, please contact Mr. Dean Masai at (808) 587-3804.

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