

Frequently Asked Questions (FAQs)

Request for Variance from Mandatory Solar Water Heater Law

Effective 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 HRS 196-6.5).

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 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 worksheet. Completed, stamped and signed Requests and LCC comparison worksheets should be e-mailed to **SWH-Variance@dbedt.hawaii.gov** (please put "SWH Variance" in subject box).

Frequently Asked Questions (FAQs)

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?

Go to the following website:

1. <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:
SWH-Variance@dbedt.hawaii.gov (please put "SWH Variance" in subject box).

3. **If I do not want to install a solar water heater on my new home, what are my options?**

There are three options, all of which must be requested with the Request for Variance 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 those 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 of heating water for 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 and sent to the e-mail 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) Photovoltaics
- 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** that is certified by the Underwriters Laboratories (UL-certified). **If you choose this option, you must also install at least one other gas-powered appliance.**

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 other gas appliance must be installed in your home if you choose the gas, tankless, instantaneous water heater option, and **it must be listed on the Request form.**

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.

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. **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 have printed evidence that the model you are using is UL-certified.

The UL website lists eight 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

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

Go to the UL website listed above in paragraph 7.

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

Your licensed professional will need to 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 e-mail address in paragraph 2 above.

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

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

11. 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.

12. 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

13. 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>

14. If I have more questions, who do I ask?

Send your questions to the e-mail address listed in paragraph 2.