



Validations: Everything you need to know

The validation step is perhaps the most important part of the overall process to install a rooftop PV



system. It's the point where the utility verifies that the installation matches what was approved and that inverters are programmed with the correct settings. However, when a validation doesn't go smoothly, it can be frustrating and time consuming for all parties involved – the customer, the contractor and the utility.

From the Companies perspective, we're always working to align our internal procedures to provide greater consistency in how we process validations. However, our grids are not identical and we process validations with those unique characteristics in mind.

Regardless, we all share the same interest in making validations as painless as possible. Here are three things you can do to improve your chances of submitting a successful validation:

1. Check to make sure that any previous flags for minor errors/omissions have been fixed/corrected prior to validation. Unresolved errors and omissions are often the reason why validations are rejected.
2. Check to make sure the inverters are programmed correctly. This includes energy

storage system inverters (i.e. Tesla Powerwall 2 AC/Gateway programming, etc.).

3. Take lots of photos and make sure we can read the information on nameplates. Don't forget to include the nameplate photos of energy storage systems.

Expedited Validation Option

Hawaiian Electric recently launched a pilot on O'ahu that offers an expedited validation option (EVO) to contractors with a solid track record of submitting accurate and complete validation packets.

There are no application requirements. The status is granted on a quarterly basis based on the performance during the previous quarter.

The EVO allows these contractors to fast-track the interconnection process for customers by sending in a signed form attesting that all of the validation requirements have been met.

Each week the company will randomly select attestation forms for an audit. When selected, the contractor will have a week to submit all of the information provided at validation to verify the accuracy of the attestation.

Contractors that earn EVO status may choose to continue submitting validations.

You can find all of the information about the EVO pilot, including the list of contractors that have earned EVO status for the quarter, on the Hawaiian Electric website at www.hawaiianelectric.com/EVO. The option is not currently available for projects built outside of O'ahu.

Validation Requirements: Elements of a complete package

- ☑ **Permit:** They are called Building Permits in Honolulu County and Electrical Permits in Maui and Hawaii Counties. Regardless of the name you'll need to provide the permit number and closure date.
- ☑ **Name of electrician license holder and the license identification number.**
- ☑ **As-built line drawings:** If different than previously submitted. Remember, that if the as-built installation doesn't conform to the conditionally approved application, revisions may be necessary.
- ☑ **Photos of PV panel(s):** We need to be able to read the nameplate label.
- ☑ **Photos of Inverters (Central and Micro):** There should be a photo of every inverter (**PV and storage**) nameplate label with visible, readable model numbers and you must include PV sub-panel breakers, central inverter layout and location in relation to the meter.
- ☑ **Photos of AC System disconnect:** We need to be able to read the information on nameplate label. We also need wider angle pictures that clearly show the signage in relation to the meter, the location of the disconnect in relation to the meter and we also want to see that the appropriate labeling has been done of multiple system disconnect switches. We check to see that the disconnect is within six feet of the meter. If not clearly visible and within close proximity, there should be additional signage at the meter to indicate the location of the disconnect.
- ☑ **Photos of Utility Meter:** We need to see the meter with visible signage. Don't forget to include production meter socket if building a CGS Plus system.
- ☑ **Photos of Energy Storage:** There should be readable photo(s) of each nameplate label and photo(s) of the enclosure(s). Don't forget to include inverter photos/screenshots, as noted elsewhere in this list, if applicable to the system.
- ☑ **Photos of Main Service disconnect:** The photos must show the signage in relation to the main disconnect.
- ☑ **Inverter Screenshots:** We need to see PV and storage inverter screenshots (or photos) of settings that clearly show compliance with the technical requirements in Rule 14H and any additional requirements as agreed to for condition of approval (i.e. Volt-watt). Smart Export systems that indicate non-export must show capability.
- ☑ **Certificate of Insurance:** As stipulated by the program's requirements (if applicable).
- ☑ **Property and equipment accessibility.**
- ☑ **CGS Plus Aggregator Option:** CGS Plus systems must include photo and signage of aggregation configuration that is consistent with the site plan (i.e. production meter socket box if using utility option). If using a third-party provider, we'll need a photo/screenshot that demonstrates controllability.

- ☑ (cont.) Please contact us ahead of time to discuss acceptable requirements as they may vary by provider. We'll need confirmation that the aggregator is operational when requirements are approved by the PUC. Until then, customers on O'ahu may submit an acknowledgment form at validation stating that they will provide confirmation of aggregator operation within six months after third-party aggregator requirements are approved. Neighbor island systems are not accepting validations for third-party aggregator systems until the approved option is confirmed and installed.



A Note about Advanced Inverter Settings

Our verification of the new advanced inverter settings at validation is sometimes delayed if we don't have the information we need from the inverter manufacturer to confirm correct settings.

While we do everything possible to obtain the information we need in a timely manner, any delay is a source of frustration. This is a problem that will diminish as we work through this transition with the manufacturers; however, in the interim you're welcome to check with us prior to submitting a validation to determine if we're able to process your particular inverter right away.

Giving us a heads up will allow us to start working on getting the information we need from the manufacturer sooner and you'll have a clearer idea of what to expect for processing times at validation.

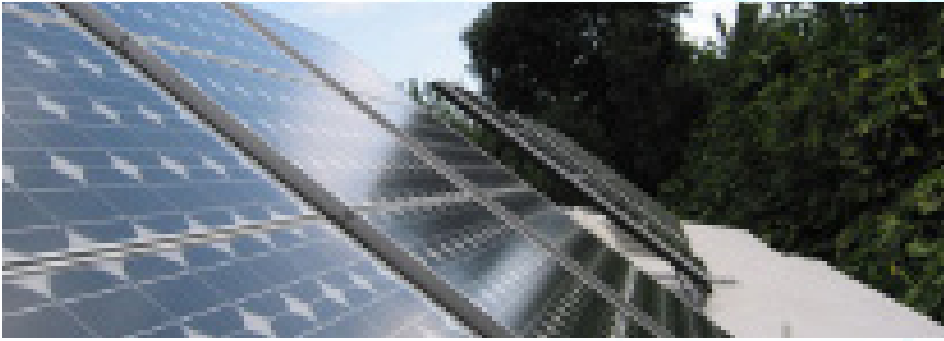
Closing the loop on Volt-watt

Customers are offered options to consider when the review of the proposed system indicates high-voltage issues on the secondary network. These options typically include an Interconnection Requirements Study, activation of Volt-watt, switch to Customer Self-Supply or to end their application.

We've discovered that the communication of the chosen selection doesn't always make it to the contractor or isn't clear, particularly if it's the Volt-watt option.

So, when a customer notifies us that they are going to go with the Volt-watt option as a condition of approval, we'll send them an email acknowledging their decision and copy the contractor of record.

When you receive these emails, please make sure to note the information in the customer file because you will need to provide the corresponding screenshot of Volt-watt activation at Validation. If we don't receive the screenshot, the customer will have to wait to turn on their system.



Advanced Inverter Programming

Earlier this year, some important changes took effect regarding advanced inverter compliance. Specifically, all applications (with the exception of NEM) that were conditionally approved on or after January 1, 2016 are required to update inverters with the full suite of advanced inverter functionality if they haven't already done so.

Contractors with inverters requiring action have been emailed a list of their affected customers. If you've received this email, here's a reminder of what needs to be done:

- ✦ Re-program inverters with the full suite of required advanced inverter settings as noted in Rule 14H including TrOV-2, full ride-through, Frequency-watt, Volt-var, and deactivation of fixed power factor. Volt-watt is also required for those customers who voluntarily agreed to activate the function as condition for approval.
- ✉ Email the appropriate inverter screenshots with a validation form to the corresponding utility.
- ⌘ Don't forget to update ALL inverters in every system including energy storage.

Contractors have until January 31, 2019 to get the work done and the information submitted to us. If we don't receive the required information by that date, we will reach out to your customers letting them know that their system is non-compliant and may result in turning off their system until the advanced inverter functions have been verified as activated.

The Companies are aware that some manufacturers did not formally certify certain inverter models as they had previously indicated. The Companies have, at the request of the inverter manufacturers, granted limited exemptions from the formal certification requirements for the Enphase S series and the SMA TL22. The formal exemptions allow the inverters to remain installed and they must still meet all of the activation requirements.

This exemption is limited to systems that had already been approved prior to the March 10, 2018 deadline and not to any new or existing applications that have not received conditional approval. Systems that haven't been built yet should be replaced with inverters that are on the Qualified Inverter List located on our website.

If you don't recall seeing a recent email from us about this topic, please give us a call to verify if you have systems that need attention.

Update on adding non-export tech to NEM systems

The Hawai'i Public Utilities Commission recently clarified the rules that we'll follow for adding non-export equipment to existing NEM systems.

Eligibility is limited to existing NEM customers only. Some of the exact details are still being worked out in coordination with industry stakeholders, but very soon we will make available the amendment application to begin the process.

Although we will incorporate this application into the Customer Interconnection Tool, we may start with a paper form because you've told us that there's pent-up demand for this option and we want to be responsive that situation.

Either way, keep watching your email and/or our website for updates. We'll let you know when we're ready to begin accepting applications along with how to submit the information.



Bookmark the Especially for Contractors page on the website for easy access to program updates, forms and useful links.

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