



## Opening the Grid to Advanced Inverters



We're working on our grid modernization strategy to improve the overall resiliency, flexibility and reliability of the grid to handle increasing amounts of distributed energy, and advanced inverters are a key element of the overall plan. Inverters are becoming smarter and by individually managing grid interactions on a real-time basis, there's growing enthusiasm for the collective benefit to overall grid operations.

Upgrading a system to use advanced inverters is considered a material change if it impacts overall system size. That means the Hawaiian Electric Companies must be notified and approve of the change prior to implementation. Given the grid benefits, we want to make it as simple as possible for customers with existing applications to use or change to advanced inverters, and the features they provide. This chart explains how we will treat revisions associated with advanced inverters:

Allowed Revisions	Requires Technical Review	Maintain Queue Position
NEM Systems Pending Execution $\leq 1000$ Watts *	No	N/A
NEM $\leq 100$ Watts	No	N/A
CGS $\leq 100$ Watts	No	N/A
CSS $\leq 100$ Watts	No	N/A
CGS $> 100$ Watts	Yes	Yes
CSS $> 100$ Watts	Yes	Yes
<b>Revisions that are not allowed</b>		
NEM Systems Pending Execution $> 1000$ Watts*		
NEM $> 100$ Watts		

\* Applies only to Hawaiian Electric and Maui Electric

Table Updated 11/2/2017

### Want to learn more about AI?

Hawai'i is the first state in the nation to make advanced inverters available to customers. Learn more about the application of this technology in Hawai'i in this study conducted by National Renewable Energy Laboratory (NREL Publication TP-5D00-6861), <http://www.nrel.gov/docs/fy17osti/68681.pdf>.

## Modified policy for PV + ESS interconnections



We listened to your feedback and we've modified our policy regarding the inclusion of both solar PV and Energy System Storage (ESS) in program sizes. As of August 14, ESS will no longer be included in the calculation of program size for new Distributed Energy Resource (DER) applications; however, it will still be included in technical review for determining possible grid impacts.

This compromise means that ESS size will no longer count toward the calculation and measurement of applicable program caps and RPS performance, or for the purposes of triggering insurance requirements under DER programs. ESS size will continue to count toward the calculation of the technical system size used for distribution modeling and planning, and the technical review of DER applications. This policy change applies to the NEM, CGS, CSS and the anticipated Smart Export programs; it does not apply to the SIA program.

The new policy only applies on a going forward basis, so please take it into account when submitting applications. However, applications with storage that were received prior to this date that are still pending execution (transition applications) will be reviewed under this policy to minimize confusion and delay for these customers. We will make any necessary adjustments to our databases to reflect the program and technical system sizes, and will not return the transition applications to customers for correction. The companies will not make any changes to its databases for PV systems with storage that were executed prior to this date.

## Important Reminders

### Certification of Advanced Inverters

The Hawaiian Electric Companies are working with stakeholders to propose an amendment to Appendix I of Rule 14H that would allow more time for inverter manufacturers to certify their equipment. The revision is intended to conform Rule 14H with the source requirement document (SRD), the recently filed stipulation and the pending update to IEEE P1547. If approved, the deadline for receiving UL 1471 SA certification would shift from September 7, 2017 to March 10, 2018 (one-year from date of issuance for the SRD). We'll keep you informed of our efforts and please continue to check our website for the most current list of [qualified inverters](#).

### Download New Applications

We've recently updated the program applications, so make sure to always [check the website](#) in advance of submitting a new application to make sure you are using the most current version. We try not to do it too often, but applications are changed as needed. Downloading the application from our site is the easiest way to prevent a delay created by inadvertently using an outdated version.

### Online Tool Coming Soon

The launch of the new Customer Interconnection Tool is just a week away. Please be on the lookout for information we'll be sending your way soon about how to set up your account, informational and training sessions and all of the details you'll need to be up and running by Sept. 27, 2017. As a reminder, the tool will be used on a going forward basis to submit and manage applications for CSS and the anticipated Smart Export program. CGS applications will continue to be accepted through the current process until the program cap is reached.

Here's an example\* in calculating the different sizes:

<b>1. Program Size:</b> 10 inverters x 5kW/ea = <b>50kW</b> (Note: Battery output not included.)	<b>2. Technical System Size:</b> 10 inverters x 5kW/ea = 50kW + 2 batteries x 3kW/ea = 6kW <hr/> Total = <b>56kW</b>

\*The AC-coupled, coincident generation configuration as shown here is for demonstration purposes only. Calculation of technical system size may vary by configuration.

While we will help customers understand the basis for each number and how it may impact their application, we kindly ask that you do the same as you work through the application process with them.

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