

**Request for Information
on
Hawaii Electricity Reliability Administrator
Organizational Considerations and Related Issues**

The Public Utilities Commission of the State of Hawaii (“Commission”) issues this Request for Information (“RFI”) to solicit input from qualified entities to potentially serve under contract as the Hawaii Electricity Reliability Administrator (“HERA”) pursuant to the provisions in HRS 269 141–149.

I. General Submission Requirements

- A. **Statement of Qualifications.** Detail any experience you may have with the administration and implementation of electric system reliability oversight programs.
- B. **Inclinations.** In addition to providing qualifications, respondents should provide inclinations that they would have towards performing some or all of the functions for which they provided qualifications and whether they are inclined to subcontract certain functions.
- C. **Questions.** All questions should be directed to the contact person shown below.
- D. **Format.** All submissions must be signed and provided in electronic format to stephen.m.mariani@hawaii.gov by **Friday, April 8, 2022, 2:00 p.m., Hawaii Standard Time**. The Commission will not accept submissions made by means or in a format other than that described above, including responses submitted in an oral, hardcopy, or other digital/electronic format.
- E. **Contact Information.** Name: Stephen Mariani
Email Address: stephen.m.mariani@hawaii.gov

II. Background

This RFI is being issued to solicit information from:

- Entities having an interest in serving under contract with the Commission as the HERA; and/or,
- Experts in the development, administration, or management of a process, program, or system similar to that envisioned for the HERA.

The Commission is in the process of exploring the opportunity to exercise its statutory ability to establish, by contract, a body to function as the HERA. Enacted by Act 166 in 2012, the legislature created new sections under Hawaii Revised Statute (“HRS”) Chapter 269 providing a framework for the establishment of the HERA and its potential roles in Hawaii.

The objective of the HERA is to ensure the reliable design and operation of the Hawaii electric systems on a continuous basis, with an initial focus on the systems operated by the Hawaiian Electric Companies (“Hawaiian Electric”). Under the authority of the Commission, the HERA is intended to establish effective and transparent Reliability Standards and oversee interconnection-related matters affecting Hawaii’s

electric systems, with the goal of maintaining safe and efficient grid operations for all users. Pursuant to HRS § 269-142, the HERA's scope also includes non-utility entities that operate on electric systems (i.e., independent power providers, ancillary service providers, etc.).

The purpose of this RFI is to gather information from entities interested in contracting with the Commission to serve as the HERA. The Commission seeks to understand the capabilities and expertise of prospective entities to provide the services envisioned for the HERA. Based on the responses to the RFI, the Commission may consider the following next steps:

1. Discuss with Hawaiian Electric and key stakeholders the intended functions and responsibilities of the HERA.
2. Establish the necessary funding sources for the contract dictated by HRS 269-146.
3. Develop a tailored RFP for a component or components of the Scope of Work ("SOW") for the HERA, following the procurement provisions outlined in HRS 269-147b.

The following sections lay out in detail the information the Commission would like to receive from RFI respondents which the Commission believes will be useful to this development process. However, respondents should feel free to provide additional information, insights, and recommendations that they think may support the development of a HERA.

III. Purpose or Need

In this section, the Commission puts forth a list of issue areas on which the HERA could potentially oversee, implement, study, and otherwise advise the Commission. For each sub-area, the Commission requests that respondents provide up to two examples and/or descriptions of expertise that exemplify their capability to serve in this sub-area. Respondents should consider including in their responses Hawaii-specific examples or expertise, if possessed. In addition to providing their applicable qualifications, respondents should include a brief narrative describing their inclinations on the breadth of work that they could perform, including the extent to which they would intend to sub-contract for any work, if applicable.

The following broad scope is organized into four key issues and their sub-areas, with examples and descriptions of the nature of work products and tasks involved with each. In their responses, respondents should use the same numbering of the sub-areas to organize their responses and note where they do not have qualifications or responses for specific sub-areas.

1. ISSUE: RELIABILITY STANDARDS

A. SUB-AREA #1A: DEVELOPMENT, REVISION, AND REPEAL OF STANDARDS

It will be under the HERA's direction to create a set of reliability standards that can be adopted by rule or order by the Commission to apply to Hawaiian Electric and other users of their electric systems. The HERA's work in this sub-area may include:

- Developing a framework for the creation of the standards (e.g., creating working groups, engaging with stakeholders, reviewing the practices of the utility and other users of the electric system)

- Reviewing the past reliability studies conducted in Hawaii and past proceedings in this area
- Leveraging and adapting existing reliability standards from the North American Electric Reliability Corporation (NERC) and other industry standards (e.g., Institute of Electrical and Electronics Engineers (IEEE), RTO/ISO and other regional planning standards)
- Performing or evaluating studies in Hawaii and on similar systems to determine appropriate reliability standards to meet Hawaii's particular system characteristics
- Evaluating current practices and recommending standards that will ensure continued expansion of Distributed Energy Resources (DER) adoption in a reliable manner
- Putting forth written materials with the recommended reliability standards for the Commission to review and adopt
- Monitoring the impacts of the adopted standards and recommending revisions, repeal, and replacement of certain standards, as necessary, per changes in the industry, technologies, or system needs

It is expected that the HERA's early work in this area will be interrelated with the planning standards currently being discussed in the Integrated Grid Planning (IGP) proceedings. Respondents are encouraged to look into the recent filings in Hawaiian Electric's Grid Needs Assessment and describe their familiarity with the planning standards in use in Hawaii and elsewhere in the industry (e.g., Energy Reserve Margin, Loss of Load Probability, Expected Unserved Energy, etc.).¹

Efforts to these ends were taken up in the past in Docket No. 2011-0206, wherein the Reliability Standards Working Group (RSWG) was charged with drafting a set of reliability standards to apply to Hawaiian Electric's systems. The RSWG's work concluded in 2013 with the submission of a Final Report² submitted by an Independent Facilitator (IF) representing the working group. Additionally, a Technical Review Council (TRC) reviewed and responded to the IF's Final Report.³ Docket 2011-0206 remains active today as a repository for monthly filings related to reliability metrics.⁴ It is recommended that respondents review these materials as examples of potential work products in this area.

B. SUB-AREA #1B: ENFORCEMENT

Pursuant to establishing a set of reliability standards, the HERA may be tasked with enforcing these standards for electric utilities and non-utility users of the grid. To

¹ See the November Update of the Grid Need Assessment, Appendix C at https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/20211105_grid_needs_assessment_methodology_review_point_book_1.pdf

² See the Final Report submitted by the Independent Facilitator in Docket No. 2011-0206 at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A13C27B50604E73541>.

³ See Report of the Technical Review Committee in Docket No. 2011-0206 at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A13E30B31018F69022>.

See documents filed in Docket No. 2011-0206 at the Hawaii PUC DMS website at <https://dms.puc.hawaii.gov/dms/index.jsp>.

effectively carry out this work, the HERA's role may include a combination of monitoring, reporting, reviewing interconnection agreements, developing violation ramifications, and providing recommendations to the Commission for determining any violation penalties. Experience in this area may include familiarity with reporting requirements, evaluation, and other forms of performance studies for reliability issues.

Enforcement of reliability standards in Hawaii may look different than in other jurisdictions due to its lack of regulated markets and its unique regulatory framework that was recently adopted in the Performance-Based Regulation (PBR) proceedings.⁵ Where applicable, respondents may describe their experience working in Hawaii's or other jurisdictions' performance-based frameworks.

2. ISSUE: INTERCONNECTION OVERSIGHT

A. SUB-AREA #2A: INTERCONNECTION PROCESS EVALUATION

The Commission has expressed ongoing concerns with delays occurring in the interconnection process for both large-scale projects and DERs. Regarding large-scale projects, several factors have been identified as causes of delays in commercial operations dates for key renewable projects. The utility has taken various measures to improve their interconnection process, but these efforts have largely been through incremental changes to the process through various competitive solicitations for new projects. Similarly, customers installing DERs have faced delays in interconnection approvals and utility action. In this area, the Commission's objective is for oversight of an improved interconnection process that is transparent, efficient, cost-effective, and fair to non-utility grid users. Areas of expertise in this area include but are not limited to interconnection of small to large systems, with necessary knowledge of inverter technologies, transmission and distribution system requirements, and the respective interconnection approval steps.

The HERA may be charged with conducting periodic evaluations of the interconnection processes, vetting recommendations to process changes, and serving as a resource for interconnection best practices. The HERA should be familiar with past iterations of the interconnection processes, previously suggested process improvements that were considered, but not adopted, and comparable interconnection processes in other jurisdictions.

For references in this sub-area, respondents may consider reviewing recent interconnection process improvements that Hawaiian Electric compiled from stakeholders in the Community Based Renewable Energy program RFP⁶ and the large-scale interconnection process evaluation conducted by one stakeholder as a part of that docket.⁷ For DER interconnections, respondents may review the recent actions taken

⁵ For more information on the PBR framework, see the Commission's website at <https://puc.hawaii.gov/energy/pbr/>.

⁶ For examples of the types of recommended interconnection improvements, see Exhibit 1, Attachment 2 in the recent CBRE RFP at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21H26B10808D00791>.

⁷ See Interconnection Process Improvement Recommendations filed drafted by Roland Berger, filed by Ulupono Initiative at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21C25B62628C00249>.

under the PBR framework to address the customer interconnection experience⁸ as well as recent process improvements for interconnection of DER systems, such as the Quick Connect Pre-Approval Program.⁹

B. SUB-AREA #2B: INTERCONNECTION COST REVIEW

One key consideration in the large-scale interconnection process is the cost that is charged to non-utility parties seeking to interconnect to the grid. Relatedly, the Commission is concerned with the level of transparency around interconnection costs and the justification for interconnection requirements.

The HERA may be charged with conducting a cost audit for large-scale interconnections which could include the full cost of interconnection, including estimates for both costs of Company-Owned Interconnection Facilities (COIF) which are paid for by non-utility entities consistent with utility's standards and requirements and costs of Seller-Owned Interconnection Facilities (SOIF), which are paid for by non-utility entities and typically not disclosed to the utility. The Commission is interested in the development of an accurate unit cost guide that can ensure a fair interconnection process across all islands, as well as within each individual island system.

For reference in this sub-area, respondents may consider reviewing the Cost Guides included in Appendix H which provide parties intending to interconnect utility-scale projects to the grid with estimated costs of COIF.¹⁰

C. SUB-AREA #2C: DISPUTE RESOLUTION

Pursuant to the HERA's work ensuring fair costs and efficient process steps for interconnection, the HERA may also be responsible for resolving interconnection disputes as they arise. These disputes will be technical in nature, related to the interconnection of resources, as opposed to contracting or other legal disputes under the purview of the Independent Observer.

Disputes which the HERA would be expected to resolve may include, but are not limited to, the following matters:

- Accuracy of analysis performed in studies and engineering conclusions
- The necessity for equipment or facilities required by the utility
- Whether there is a feasible, lower cost alternative to a requested upgrade
- Whether modifications to an application should trigger a re-study
- Whether current approval process for DERs is reasonable and efficient

⁸ See Interconnection Experience proposals under the PBR Framework in Order No. 37787, at 132 <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21E17B53226E00118>.

⁹ See details of the QuickConnect program at <https://www.hawaiianelectric.com/products-and-services/customer-renewable-programs/private-rooftop-solar/quick-connect>.

¹⁰ See Appendix H in the Stage 3 All Source RFP for Hawaii Island at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21J18A92625I00035>.

The process of invoking a dispute will be initiated by the non-utility entities engaging in the utility's interconnection process so this work will be intermittent and performed on an as-needed basis.

The HERA will also be influential in the development of a formal dispute resolution process as a part of the development of reliability standards in Sub-Area #1A. In this section, respondents may describe their familiarity or experience with dispute resolution processes in other jurisdictions.

D. SUB-AREA #2D OVERSEEING INTERCONNECTION QUEUE

The HERA is also expected to oversee the interconnection queue. Currently, through Docket No. 2011-0206, the Commission receives monthly reports on the number of interconnection requirement study (IRS) applications received across the various distributed energy resource (DER) programs, while also monitoring the utility scale interconnections that have been approved through this docket.¹¹

The information currently shared with the Commission includes the total requests, request dates, max kW of the system applying, locational attributes, proposed in-service dates, length of time the request has been pending, and any information regarding delays. The report includes additional information about mitigation measures, costs, and the program name.

The HERA may be responsible for monitoring these reports and requesting additional information, if necessary, to ensure that interconnection queues are operating efficiently across all programs. Additionally, the HERA may be responsible for validating the system reliability as a result of the proposed interconnections, leveraging the necessary hosting capacity data on the relevant system. Both tasks are intended to improve the Commission's oversight over the interconnection process.

Accordingly, the HERA could operate in a similar way to an independent system operator (ISO). In addition to overseeing the queue, the HERA might serve as a liaison for providing relevant details about hosting capacity and other interconnection queue related data to non-utility entities interested in interconnecting.

3. ISSUE: SYSTEM OPERATIONS OVERSIGHT

A. SUB-AREA #3A GRID OPERATIONS MONITORING AND DATA-SHARING

Through the development and enforcement of reliability standards and oversight of the interconnection process, the HERA will be well positioned to monitor and share real-time information related to grid conditions and system operations. While historically the Commission has relied on data reporting from the utility, the establishment of the HERA presents an opportunity to improve transparency and data sharing, by enabling the HERA to review, curate, and share pertinent information with interested stakeholders beyond what is currently available through Hawaiian Electric's resources. The HERA would take

¹¹ See Monthly IRS reports filed in Docket No. 2011-0206 at the Hawaii PUC DMS website at <https://dms.puc.hawaii.gov/dms/index.jsp>.

responsibility for coordinating with the utility's system operators to develop a process for data-sharing, while maintaining the appropriate levels of security and privacy.

Respondents are encouraged to review an example of current data sharing by the utility through their Locational Value Maps.¹²

B. SUB-AREA #3B SYSTEM PLANNING AND OPERATIONS STUDIES

The Commission envisions the HERA as being comprised of a core team of experts in electric system reliability and planning. From time to time the HERA may be called upon to perform, draft, and review technical studies related to the Hawaii electric system. This could include conducting studies on resource adequacy, ancillary services, transmission planning, and other topics related to grid operations. The HERA's responsibilities could also include reviewing and evaluating studies performed during the interconnection process and reports filed annually by the utility regarding their resource adequacy.

In this area, respondents are encouraged to provide examples of their experience with reliability studies, specifically with grid characteristics similar to the Hawaii electric system and with rapid expected growth of renewable, distributed, and inverter-based resources. With respect to these resources, the Commission is interested in determining the role for advanced inverter functionality on the Hawaiian Electric systems, which is a topic of review in the DER Technical Track in Docket No. 2019-0323¹³. Such studies may lead to HERA taking action through establishing reliability standards (Sub-Area #1A), resolving disputes (Sub-Area #2C), and overseeing the interconnection queue (Sub-Area #2D).

For reference in this sub-area, respondents may consider reviewing the Adequacy of Supply (AOS) reports filed annually with the Commission.¹⁴ Additionally, a number of studies have been completed in relation to the IGP process on Transmission Planning¹⁵ and Grid Forming technologies.¹⁶ Respondents may also consider reviewing the Reliability Analysis recently conducted by the Hawaii Natural Energy Institute related to the retirement of the AES coal plant in September 2022.¹⁷

4. ISSUE: CYBERSECURITY

¹² See the current Locational Value Maps (LVMs) for Hawaiian Electric systems at <https://www.hawaiianelectric.com/clean-energy-hawaii/integration-tools-and-resources/locational-value-maps>.

¹³ See the DER Technical Track under the PUC's DER Policies at <https://puc.hawaii.gov/energy/der/>.

¹⁴ Adequacy of Supply (AOS) Reports for all the Hawaiian Electric Companies can be found on the PUC website at <https://puc.hawaii.gov/reports/energy-reports/adequacy-of-supply/>.

¹⁵ See the Transmission Renewable Energy Zone Study in Exhibit 2 of the Grid Needs Assessment at https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/20211105_grid_needs_assessment_methodology_review_point_book_2.pdf.

¹⁶ See the Island Wide PSCAD Studies conducted by Electronix Inc. at https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/stakeholder_engagement/working_groups/stakeholder_technical/20210630_electronix_report.pdf.

¹⁷ See HNEI's AES Retirement Resource Adequacy Analysis Update at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21F21A85419I00959>.

A. SUB-AREA #4A UTILITY CYBERSECURITY OVERSIGHT

To address the increasing risk of cybersecurity attacks on electric grids and other critical infrastructure that the grid supports, the Commission anticipates that the HERA will reviews and analyze threat levels and preventative efforts being taken by Hawaiian Electric. In concert with the other sub-issue areas related to cybersecurity, oversight of Hawaiian Electric’s cybersecurity practices may involve comparison to best practices and standards in place in other jurisdictions.

For reference in this sub-area, respondents may review the initiatives that Hawaiian Electric describes in the area of Safety and Cybersecurity¹⁸ and testimony from the Chief Information Officer describing Hawaiian Electric’s protection practices and awareness of cybersecurity threats.¹⁹

B. SUB-AREA #4B CYBERSECURITY ADVISORY TO THE COMMISSION

The HERA may from time to time be asked to advise the Commission on issues related to cybersecurity threats to the electric grid. This advisory role may be carried out through studies on cybersecurity practices in other jurisdictions, analyzing cost-effectiveness of cybersecurity-related investments, and helping the Commission in decision-making on cybersecurity-related issues. In addition to providing and developing resources on utility cybersecurity practices and frameworks for protecting against threats, the HERA may be called upon to advise the Commission on Hawaii-specific cybersecurity issues as a result of its unique geography and the nature of national defense and homeland security infrastructure located in Hawaiian Electric’s service territory.

For reference in this sub-area, respondents may review the Cybersecurity Strategy Development Guide published for regulators by the National Association of Regulatory Utility Commissioners (NARUC).²⁰

C. SUB-AREA #4C DEVELOPMENT OF CYBERSECURITY STANDARDS

Similar to sub-area #1A, the Commission may charge the HERA with establishing a set of cybersecurity standards that could be adopted by rule or order by the Commission and applied to grid operations and performance standards for Hawaiian Electric and non-utility grid users alike. The development of these standards could be performed concurrently with applying oversight and advising the Commission on cybersecurity issues or after a period of time spent studying and overseeing the cybersecurity practices currently in place. The Commission is interested in developing cybersecurity standards that address threats from grid-scale and distributed resource assets as the number of non-utility entities operating resources on the Hawaiian Electric systems increases.

¹⁸ See Hawaiian Electric’s Security & Cybersecurity Initiatives at <https://www.hawaiianelectric.com/about-us/innovation/safety-and-cybersecurity>.

¹⁹ See HECO T-17 (Testimony from Hawaiian Electric’s Jason Benn, CIO and VP of IT) at <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A19H22B50826A00417>.

²⁰ See NARUC’s Cybersecurity Strategy Development Guide at <https://pubs.naruc.org/pub/8C1D5CDD-A2C8-DA11-6DF8-FCC89B5A3204>.

Initially, it may be helpful for the HERA to review and adapt existing cybersecurity guidance published by NERC²¹ and the National Institute of Standards and Technology (“NIST”)²² to form prescriptive, enforceable standards that can be utilized by the Commission to ensure proper practices are in place to mitigate cybersecurity threats.

IV. References

Included throughout this RFI are references to helpful resources that may be considered by respondents in providing their submission (see footnotes).

V. Additional Information

The issue of this RFI is solely for information gathering purposes, and not for solicitation related to any potential future request for proposals (“RFP”) issued by the Commission. Expenses incurred by any person or entity in responding to this RFI will not be reimbursed by the Commission or any other agency of the State of Hawaii.

Participation is optional, and any person or entity responding to this RFI is not required to respond to any subsequent procurement action a purchasing agency may take. Neither the purchasing agency nor the interested party responding has any obligation under this RFI.

²¹ See NERC’s Cybersecurity Frameworks at <https://www.nerc.com/pa/Stand/Pages/Cyber-Security-Permanent.aspx>.

²² See NIST’s Cybersecurity Framework at <https://www.nist.gov/cyberframework>.