OBJECTIVE AND SIGNIFICANCE: This project supports the Hawaiian Electric Companies Integrated Grid Planning (IGP) Process by providing technical expertise and independent analyses to help inform the utilities, regulators and other stakeholders decision making in the electric system planning process.

BACKGROUND: In a novel way, the HECO Companies new IGP process brings together generation, transmission and distribution, and procurement planning into a single integrated process. See Figure 1. The HNEI Director is the Chair of the IGP’s Technical Advisory Panel (TAP) that is comprised of national and international electricity systems experts. The TAP provides independent assessment, review, feedback, and critique of the utility’s planning models, methods, assumptions, and results.

HNEI has supported TAP activities and has provided detailed technical reviews of the HECO IGP interim methodologies, modeling results, future plans and draft reports. This includes suggestions related to alternative methodologies, data sources, and modeling tools that the utility may consider implementing during the IGP process, as well as supplementary technical analysis to augment utility efforts.

PROJECT STATUS/RESULTS: Specific IGP recommendations include the following:

- IGP Reserve Planning Criteria: HECO’s proposed IGP reserve requirements should align directly with ongoing Stage 2 RFP grid service procurements, and suggested changes to the modeling methodology that could reduce potential costs associated with conservative assumptions that could increase ratepayer costs.

- IGP Transmission Planning Criteria: Methodologies for emerging grid stability challenges with high levels of inverter-based resources (wind, solar, & storage), based on industry experience in California, Texas, and internationally - included a recommendation for control stability requirements and evaluation methods for the safe and reliable operation of new resources on the grid.

- IGP Capacity Planning Criteria: Implement reliability standards to properly evaluate reliability from standalone and hybrid battery energy storage assets.

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