Hawaii Natural Energy Institute Projects

Grid Integration & Renewable Power Generation

Hawaii Solar Integration Study

PROJECT SUMMARY

In collaboration with GE, the Hawaii Solar Integration Study (HSIS) examined the operational impact of high penetrations of solar and wind energy on the Oahu and Maui bulk power systems. Evaluations included: reserve strategies, impacts on thermal unit commitment and dispatch, utilization of energy storage, renewable energy curtailment, and other aspects of grid reliability, operations and costs.

The results showed that while Oahu's grid could maintain reliability while integrating the amounts of variable renewable energy in the highest penetration scenarios, the Maui system would need to curtail most of any additional solar generation, in addition to the curtailment of wind that currently existed. The Maui analysis identifies sever curtailment mitigation strategies.

PROJECT RELATED LINKS

TECHNICAL REPORTS:

1. **Hawaii Solar Integration Study for Oahu**, April 2012
2. **Hawaii Solar Integration Study for Maui**, March 2013

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