Model Refinement for Economic Assessments of Hawai‘i Clean Energy Policies: Scenario Selection

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Selection of Scenario for Analysis

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Model Update

The July 30, 2010 preliminary report on model development outlined the Hawaii Computable General Equilibrium (H-CGE) and Hawaii Electricity Model (HELM) developed for this project. The models presented preliminary output for the baseline calibration. The link from H-CGE to HELM (the electricity forecast demand) was presented and, currently, the link from HELM to H-CGE (overall economy impacts of various energy portfolios) is under development.

In addition, the HELM dataset largely consisted of "placeholders" within the July Report. The dataset has been updated with publicly available sources and is "complete" in the sense that it is ready for stakeholder review.

Scenario Analysis

While H-CGE and HELM can be developed to address a wide variety of energy policy scenarios, given the adoption by the Hawaii State Legislature of a more stringent Renewable Portfolio Standard (RPS) targets and the exclusion of energy efficiency from the RPS with the creation of the Energy Efficiency Portfolio Standard (EEPS), the study team will assess the optimal energy technology selection to achieve 40% renewable energy by the year 2030. This work will serve as a baseline by which to later address the EEPS (potentially next year's scope of work).

The RPS will be modeled within HELM based on the constraints of two regulated electric utilities in the state: one operating solely on the island of Kauai (KIUC) and the other operating on all other islands (HECO, MECO, and HELCO).

The scenario will be assessed under 1) the case that an undersea cable is built connecting Maui County to the City & County of Honolulu, and 2) that each island has an isolated grid system. Within the "cable scenario," installation costs will be reflected through amortized "loan payback" by taxpayers. Thus, the macroeconomic impacts of the cable, as well as the renewable energies that it allows (i.e. greater wind penetration) will be accounted for within the model.