

“Hawaii Clean Energy Initiative Scenario Analysis” report by Booz Allen Hamilton
Under contract to the National Renewable Energy Laboratory
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The scenario analysis was conducted in 2008-2009 to inform the Hawaii Clean Energy Initiative partnership and help answer three primary questions:

1. Is it possible for Hawaii to reach a 70 percent clean energy target by 2030?
2. If yes, what are the most likely technical pathways and what is the estimated cost?
3. What are the most important policies to get Hawaii headed in the right direction?

Eight different scenarios were analyzed for review and discussion by the working groups. Several issues and an additional scenario were evaluated further, in separate studies. The analysis showed that:

1. It is technically possible for Hawaii to reach a 70 percent clean energy target by 2030.
2. Balancing the investment costs with the savings resulting from less oil use indicate that it could be economical to the state, over the long term.
3. Policies supporting energy efficiency, renewable energy, and undersea interconnection cable are important to reach the goal.

Highlights from the report:

- Reaching a 70 percent clean energy target by 2030 is attainable, but only through a broad array of strategies, including high energy efficiency savings from new and existing residential and commercial buildings, increased use of biofuels, broad adoption of plug-in electric vehicles, and most importantly a variety of renewable energy sources (including solar, wind, geothermal, biomass, hydropower, ocean energy) and an undersea cable to connect renewable sources to significant load areas.
- At the time the analysis was conducted, statewide demand for electricity was expected to grow 20 percent to 1,661 megawatts by the year 2030 without additional efforts to reduce energy use.
- At the time the analysis was conducted, demand for gasoline and other fuels used for ground transportation was projected to increase 25 percent by 2030.
- Under this business-as-usual approach, Hawaii residents and businesses would spend more than \$111 billion from 2008 to 2030 in fuel costs.
- An energy policy using significant wind, solar, geothermal, biomass, hydropower, and ocean energy resources and adopting aggressive energy efficiency and transportation programs was shown to help shield consumers and business from volatile oil prices.
- An economic simulation, using a variety of oil prices and discount rates, indicated that the Hawaii Clean Energy Initiative (Scenario 8) would save money for Hawaii residents and businesses over the long term if the average price of crude oil between 2008 and 2030 was above \$65 - \$85 per barrel (oil is currently over \$100 per barrel).

The full report is available from the website of the National Renewable Energy Laboratory:

<http://www.nrel.gov/docs/fy12osti/52442.pdf>

