

HAWAII



| PROJECT NAME | TYPE |
|-------------------------------------|-----------------|
| Hamakua Biomass Energy Plant | Biomass |
| Hu Honua Bioenergy, Biomass Plant | Biomass |
| Imperium Renewables Biodiesel Plant | Renewable Fuels |
| Penguin Bank Wave Energy Project | Wave |

Economic Overview

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|--|-----------|
| Population (2009 in thousands) | 1,295 |
| Personal Income per Capita (2009) | \$42,009 |
| Employment (Aug 2010 in thousands) | 594.2 |
| Unemployment Rate (Aug 2010) | 6.4% |
| Change in Jobs (Jan. 2008 – Aug. 2010) | -40,800 |
| All State Government Expenditures | \$10.5 bn |

Electricity Costs (cents/kilowatt hour)

| | |
|-------------------------|-------|
| Residential (June 2010) | 28.36 |
| Commercial (June 2010) | 26.14 |

Benefits from Proposed Energy Projects

Upfront Investment (total of all projects)

| | |
|--------------------------------|-----------------|
| Total Economic Output (in PDV) | \$8,200,000,000 |
| Employment Earnings (in PDV) | \$2,800,000,000 |
| Average Annual Jobs | 25,300 |

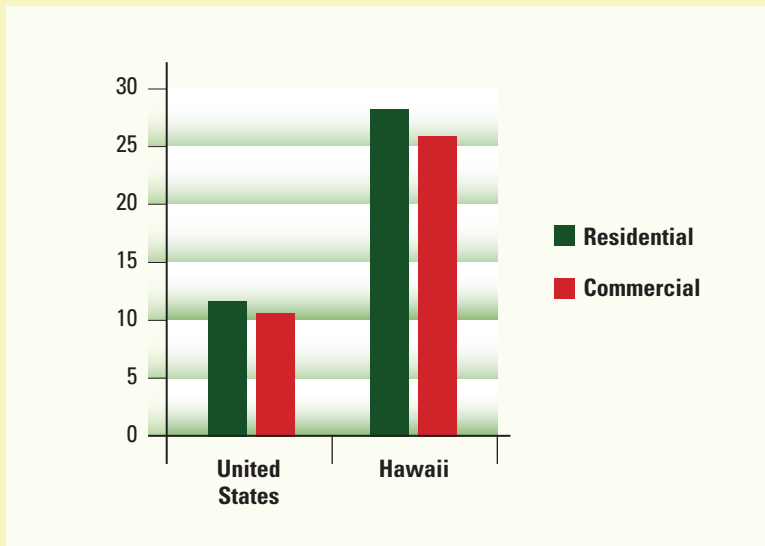
First Year of Operations (total of all projects)

| | |
|--------------------------------|-----------------|
| Total Economic Output (in PDV) | \$1,700,000,000 |
| Employment Earnings (in PDV) | \$400,000,000 |
| Average Jobs Created in Year 1 | 8,700 |

Example Project

Penguin Bank Wave Energy Project

Grays Harbor Ocean Energy Co. proposed to erect 100 ocean platforms over a roughly 80-square-mile area between O’ahu and Moloka’i to harness up to 1,100-megawatts of electricity from waves and wind. The proposed Penguin Bank site, in the heart of the Hawaiian Humpback Whale National Marine Sanctuary, is considered to be a prime feeding and calving area for whales and an important feeding ground for Hawaiian monk seals. It is also popular with commercial and recreational fishermen. The company acknowledged this would be a very challenging site and that the environmental concerns would be substantial, but argued that the site was the only one in Hawaii that would work for such a large project. The company also maintained that the project would have caused no significant environmental impacts or threats because the submerged parts would be immobile and, once they have been installed would simply be a “bunch of sticks in the water.” Environmental groups and local residents vehemently opposed the project. On April 21, 2009, FERC and MMS agreed to rule changes that effectively terminated the Penguin Bank project.



U.S. vs. Hawaii Electricity Costs
(cents/kilowatt hours)