



NATIONAL
OCEAN
INDUSTRIES
ASSOCIATION

ENERGY CHALLENGES FOR HAWAII AND THE NATION

NOIA'S MISSION IS TO SECURE RELIABLE ACCESS TO THE NATION'S VALUABLE OFFSHORE ENERGY RESOURCES IN ORDER THAT THEY MAY BE DEVELOPED, PRODUCED AND SUPPLIED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER.

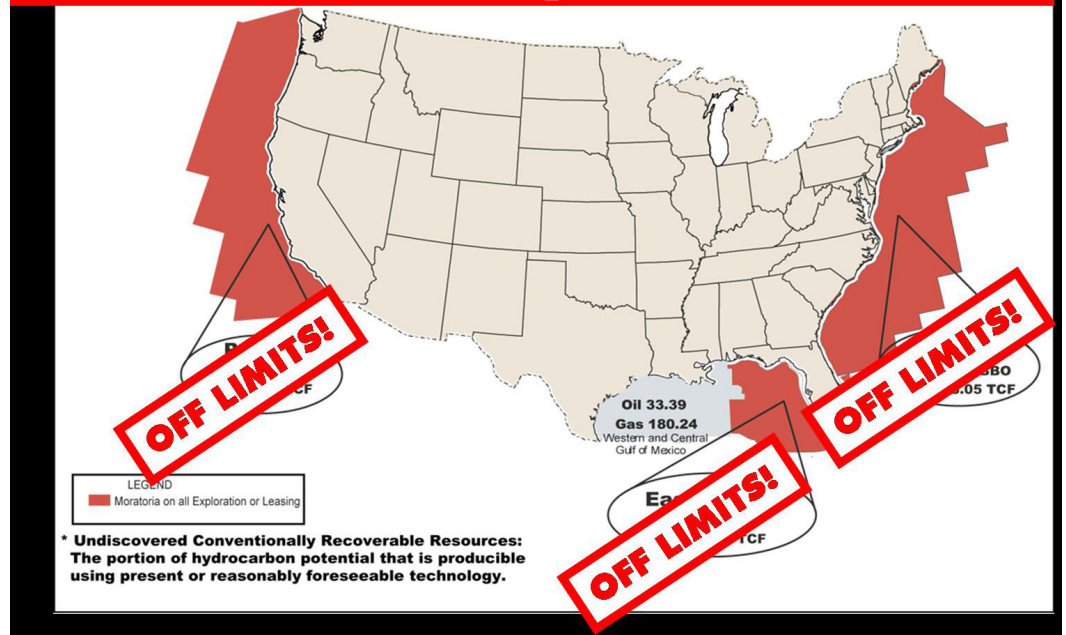
Today, energy prices are on the rise across the nation. This affects individual citizens, industrial consumers, and the agricultural industry. But why is this so?

It all comes back to supply and demand. As the economy has grown, the demand for energy has grown every year. At the same time, however, policymakers have refused to make any changes to increase available supplies of energy. For example, over 80% of the nation's oil and natural gas resources on the Outer Continental Shelf is completely off-limits to exploration and production, despite a decades-long record of safe offshore production in the Central and Western Gulf of Mexico.

What can be done? Energy consuming states must make themselves heard and push for changes to policies like this that limit energy supply. This is key to long-term strategies to control prices and maintain economic growth and employment at home.

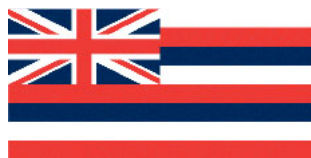


Less than 19% of OCS is Open to Development



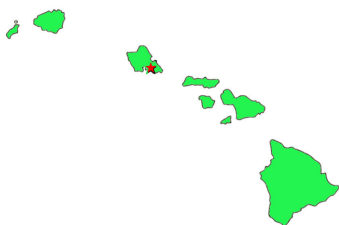
ENERGY PRICES: A NATIONAL PERSPECTIVE


- In the last 25 years, our energy consumption has grown by 30 percent, while supply only increased at half that rate. In just the past decade, as our economy grew, energy consumption increased by more than 12 percent. But our domestic production increased by less than one-half of 1 percent.
- Between now and 2030 – just less than 25 years from now – we will need 55 percent more electricity than we generate today and consumption of all sources of energy are expected to increase:
 - o *Petroleum by 41 percent*
 - o *Natural gas by 33 percent*
 - o *Coal by 41 percent*
 - o *Renewable energy by 39 percent*
- The Energy Information Administration predicted on Jan. 11 that the average U.S. home heating bill in 2006 will increase by \$257, or 35 percent, for natural-gas heat; \$275, or 23 percent, for oil heat; and \$184, or 17 percent, for propane heat.
- The price of U.S. natural gas has hit peaks recently of about \$15/million btu's, the rough equivalent of paying \$7 a gallon for gasoline.
 - o *This is more than double what they pay in China, and 50 percent higher than prices in the United Kingdom. The U.S. price is 20 times what Saudi Arabians pay.*
- High energy prices, particularly for natural gas, have cost the economy 2.8 million jobs since 2000.
- More than 100,000 lost jobs in the chemical industry, and the closure of 70 chemical facilities in 2004 alone, have resulted from high prices of natural gas.
- During the 2003 and 2004 growing seasons, farmers paid more than \$6 billion in added energy-related expenses, a 41% increase over 2004, according to USDA's Economic Research Service.



HAWAII ENERGY CONSUMPTION, OUTLOOK AND ITS ECONOMIC IMPACT:


- Energy – its supply and use-is the foundation of Hawaii’s economy. How much fuel is imported and how efficiently it is used impacts each resident’s personal life and business activities.
- In 2004, Hawaii consumers spent \$4.35 billion for energy in 2004, or 18 percent more than in 2003. This was about 8.7 percent of Hawaii’s \$50.13 billion Gross State Product.
- According to the Rocky Mountain Institute, the increase in oil prices since 2002 has cost Hawaii more than \$1 billion, and increased energy expenses more than \$1500 per household.
- Hawaii, the most oil-dependant of the 50 states, relies on imported petroleum for about 89 percent of its primary energy. Most of this oil is from foreign nations. In 2000, Asian crude from China and Indonesia accounted for 40 percent of oil imports. If current utility plans are followed, the State’s reliance on oil will continue through 2020.
- The state’s petroleum use increased slightly, rising 1.17 percent from 2003 to 2004. Petroleum consumption totaled 287.8 trillion Btu in 2004; it was somewhat more than 284 trillion Btu in 2003.
- The primary sources of electric power in Hawaii are as follows: petroleum – 77 percent; coal – 14 percent; wood and waste – 4 percent; geothermal – 4 percent, and hydropower – less than 1 percent.
- Hawaii’s primary energy consumption in 2004 was 324 trillion British thermal units (Btu), up 1.14 percent over 2003. Imported fossil fuels -coal and oil-represent almost 94 percent of Hawaii’s energy consumption.
- Oahu dominates the State’s energy scene, accounting for over three-fourths of primary energy consumption.
- Coal consumption in short tons increased 2 percent from 2003, continuing a trend begun in 1985. Since 1993, the State of Hawaii has been relying on coal to satisfy approximately 15 percent of its electricity needs and 5 percent of the state’s primary energy. The majority of the coal is from Indonesia, importing more than 550,000 tons per year. By 2016, Hawaii Electric Company plans to add another 180 MW of coal-fired capacity.
- In 2004, electricity sales per capita were 162 percent more than 1970. 2004 electricity sales increased 2.96 percent over 2003, resulting in a 2.09 increase in electricity sales per capita.
- Hawaii has two refineries that supply products to local markets. The refineries are biased toward jet fuel and other transport fuels.
- In September 2005, Hawaii instituted the nation’s only state law to cap gasoline prices. Since April 2006, at least 85 percent of Hawaii’s gasoline must contain 10 percent ethanol. Five ethanol plants are currently planned for construction in the islands: two each on Maui and Kauai, and one on Oahu. All expect to make use of molasses or bagasses, by-products of the sugar industry. The first facilities are expected to begin production in late 2006.



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- Hawaii's renewable Portfolio Standard sets a target of 20 percent renewables by 2020. During 2004, renewable energy production increased by 4.03 percent. Much of this was due to increased output from Hawaii's Puna Geothermal Venture's power plant. Hawaii's geothermal reserves, based on available exploration and well testing data, are estimated at about 1,535 MW.
 - In 2005, funding was approved for a biomass collection and distribution system in cooperation with the Pacific Missile Range Facility at the Kehaha landfill on Kauai.
 - On the Big Island, Hawi Renewable Energy Development broke ground for its new 10.56 MW wind farm in N. Kohala. On the south end of the Big Island, Apollo energy is upgrading their facility, increasing capacity from 7MW to 20.5 MW.
 - In October 2004, a 309-kilowatt solar installation was dedicated on the rooftop of Building 54, an historic aircraft hanger on Ford Island, Pear Harbor. The system, the largest federal solar electricity facility in Hawaii, will save \$40,000 per year.

(Data is drawn from the Department of Energy-Energy Information Administration, 2005 Hawaii Energy Resources Coordinator Annual Report and the Hawaii Hydrocarbon Outlook)

INCREASING ENERGY PRICES HURT MANUFACTURING INDUSTRIES, IMPERILING HAWAII JOBS:

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- As of April 2006, Hawaii was home to more than 15,400 manufacturing jobs, paying employees an average of \$32,576 per year. Chemical manufacturing – which depend on natural gas as a critical input – accounted for \$8 million in Hawaii's exports in 2005. Unfortunately, all these jobs are also in jeopardy due to the high price of natural gas and petroleum.
 - Approximately 42 percent of Hawaii is forested. Hawaii's forest products industry is a vital component of the state's economy, employing 1,000 workers with an annual payroll of over \$19 million. Hawaii's paper and wood manufacturing workforce represents one percent of the state's total manufacturing workforce; however, these jobs are also in jeopardy due to the high price of natural gas. Nationally, more than 232 mills have closed and 182,000 jobs have been lost (12 percent of the industry's national employment) since 2000 when energy prices started to rise.
 - Today, energy is the third largest manufacturing cost for the forest products industry (18 percent for pulp and paper mills), growing quickly enough to eclipse employee compensation.

INCREASING ENERGY PRICES SQUEEZE STATES AND COUNTIES, UNIVERSITIES, AND INDIVIDUAL CONSUMERS:

- Approximately 80 percent of the 2,625 buildings owned and operated by the State are on Oahu. In 2004, State facilities on Oahu used some 556 million kilowatt-hours, costing over \$71 million. Air conditioners consumed most of the electricity – 44 percent – followed by lighting at 30 percent.



- The County of Hawaii owns and operates about 200 buildings with an estimated total floor area of 750,000 square feet. The combined annual electricity costs for these facilities are over \$1,700,000. Consumption in these buildings range from the largest at 2,500,000 kWh/year (costing \$375,000/year) to small pavilions and park facilities with minimal consumptions.
- The John Burns School of Medicine in Kakaako is struggling with operational costs of about \$10 million a year, with utility costs the big worry. In 2005, the school under budgeted utility costs by about \$1 million. Because of increased facility operation cost, faculty recruitment was halted in 2005 to make up the difference.
- Hawaiians paid the nation's highest costs for electricity, at roughly twice the national average. In 2004, Hawaii paid an average of 15.70 cents per kilowatt-hour compared to 7.62 cents per kilowatt-hour for the U.S. total. Hawaii residential electricity prices also lead the nation costing 18.06 cents per kilowatt-hour compared to 8.97 cents per kilowatt-hour for the national average.
- Due to the mild tropical climate, more than 44 percent of Hawaiian homes use no fuel for heating, while nearly 48 percent use electricity as their main heating fuel.
- In 2005, an estimated 6,500 households throughout Hawaii received more than \$2.1 million in Low Income Home Energy Assistance (LIHEAP) funding to help pay their heating and cooling bills.
- According to the National Energy Assistance Directors' Association, the number of Hawaii households needing energy assistance increased 8.4 percent from 2002-2004.



INCREASING ENERGY PRICES SQUEEZE FARMERS AND AGRICULTURAL INDUSTRIES:

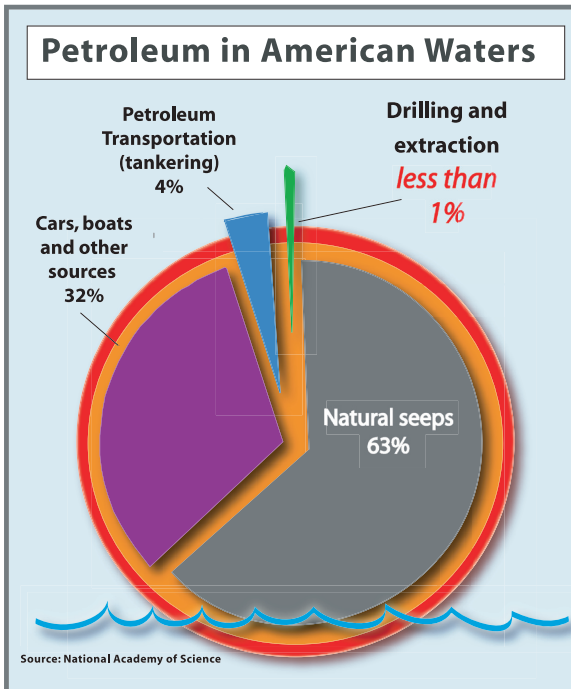
- Hawaii is home to more than 5,500 farms and ranches, covering more than 1.3 million acres of farmland. In 2004, the farm economy produced cash receipts of more than \$544 million. Directly and indirectly, the agricultural sector provides more than 42,000 jobs.
- In 2005, 30 Hawaii dairy farms produced more than 69 million pounds of milk. Throughout Hawaii and the nation, many dairy farmers have been impacted by high energy costs with increases in feed stock, motors, lighting, and transportation costs.
- The inventory of cattle on Hawaii ranches totaled more than 155,000 head in early 2005. Increasing energy costs – in the form of higher prices for transportation, electricity and related costs in the feed and ingredient processing industries – result in dramatic changes in the feed and cattle industries.
- According to the Food and Agriculture Policy Research Institute, fertilizer costs are up 70 percent and fuel costs are up 113 percent since 2002. From 2005 to 2006, these prices are expected to rise another 10 to 15 percent.



A PLAN OF ACTION:

What can be done to increase energy supplies?

- Call on Congress and the Administration to cultivate a plentiful, diverse and affordable energy supply for America.
- Pursue renewable technologies such as offshore wind and tidal power and the development of offshore methane hydrates.
- Promote energy conservation and greater efficiency.
- Increase refining capacity and import facilities.
- Provide access to the Outer Continental Shelf (OCS) for exploration and development of the nation’s valuable offshore energy resources in an environmentally responsible manner. Over 80 percent of all federally controlled coastal waters are currently off-limits to energy exploration and production, yet the OCS is conservatively estimated to hold over 419 trillion cubic feet of technically recoverable natural gas resources and 86 billion barrels of oil. This is enough:
 - natural gas to heat 100 million homes for 60 years.
 - oil to drive 85 million cars for 35 years.
 - oil to replace current Persian Gulf imports for 59 years.



Offshore drilling is safe: Less than 1% of oil found in the ocean comes from offshore production, significantly less than results from natural geologic seeps and run-off from land-based sources