



NATIONAL
OCEAN
INDUSTRIES
ASSOCIATION

ENERGY CHALLENGES FOR ARIZONA 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.



ARIZONA ENERGY CONSUMPTION AND ITS ECONOMIC IMPACT:

- In 2003, 62.7 percent of the money Arizona residents spent on energy - \$6.3 billion – left the state.
- In 2002, Arizona spent more than \$10.4 billion on energy expenditures including coal, natural gas, nuclear, petroleum, and electric power.
- Arizona ranked 26th nationally in total energy consumption, consuming 1.3 quadrillion British thermal units (Btu). In 2001, Arizona ranked 23rd in the nation for residential consumption, 21st for commercial, 36th for industrial, and 19th for transportation.
- Arizona’s energy consumption increased by 598 trillion Btu between 1980 and 2001, representing an average annual increase of 2.8 percent.
- During the 1990’s, energy use by end-use consumers in Arizona grew at an average rate of 2.7 percent per year, more than twice the 1.2 percent per year demand growth for the nation. Arizona’s rapid population and economic growth was the reason for the rapid increase in energy demand.
- Electricity demand in the 1990’s, including electric utilities, increased by 5.2 percent for electricity; 3.5 percent for petroleum; and 1.3 percent for natural gas. The primary sources of electric power in Arizona are as follows: coal – 44 percent; nuclear – 32 percent; natural gas – 14 percent; hydropower – 9 percent, petroleum and non-hydro renewable energy – less than 1 percent.
- In 2004, Arizona residents and businesses paid an average of 7.45 cents per kilowatt-hour, ranking Arizona the 18th most expensive in the country.
- Arizona electricity consumption increased by 35,520 million kilowatt-hours (kWh) between 1980 and 2001, representing an annual average increase of 4.1 percent. Between 2001 and 2007, 16,032 Megawatts of additional generation capacity was planned, 95 percent of the plants would use gas and 5 percent are slated to use coal.
- In 2004, Arizona’s crude oil production totaled 142 barrels a day from 18 producing oil wells, which ranks them 30th out of 31 producing states. The state’s crude oil proved reserves accounts for less than 1 percent of U.S. crude oil proved reserves.
- In 2004, Arizona had two coal mines producing 12.7 million tons of coal.
- Arizona’s used more than 7 million gallons of gasoline a day reports the American Automobile Association of Arizona, that’s the equivalent of 173,000 barrels of gas.
- Arizona is home to the Palo Verde Nuclear Power Station, the largest nuclear generating facility in the United States.
- According to the Center for Renewable Energy Resources, Arizona leads the nation in potential solar energy resources.
- In February 2006, the Arizona Corporation Commission voted to increase the percent of energy that must come from renewable sources such as solar, wind or biomass to 1.25 percent, increasing by .5 percent each year to 2010. Subsequently, the ACC has set the rate to increase at one percent a year until 2025, when renewable energy resources will total 15 percent of utility production portfolios.



(Data is drawn from the Department of Energy-Energy Information Administration, 2002 Arizona Energy Infrastructure Report and the U.S. Census Bureau)

INCREASING ENERGY PRICES HURT MANUFACTURING INDUSTRIES, IMPERILING ARIZONA JOBS:

- A recent report by the Arizona Department of Economic Security (DES) reflects the continuing decline of manufacturing in Arizona. According to DES, manufacturing now represents only 7 percent of total non-farm jobs in Arizona, down from 12 percent in 1990.
- As of April 2006, Arizona was home to more than 183,800 manufacturing jobs, paying employees an average of \$52,720 per year, 45% higher than the average wage and salary for the state. Chemical, plastics and rubber manufacturing – which depend on natural gas as a critical input – accounted for \$894 million in Arizona’s exports in 2005 and supported more than 3,800 jobs directly. Unfortunately, all these jobs are also in jeopardy due to the high price of natural gas.
- Approximately 27 percent of Arizona is forested. Arizona’s forest products industry is a vital component of the state’s economy, employing 14,000 workers with an annual payroll of over \$405 million. Arizona’s paper and wood manufacturing workforce represents 5.5 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 BUSINESSES, UNIVERSITIES, AND INDIVIDUAL CONSUMERS:

- In 2006, Arizona State University was expecting a 20 percent rate increase for natural gas, costing the University approximately \$700,000 this fiscal year. According to the *Arizona Republic*, high utility costs to cool schools in early August and many absent students during the late summer months could drive the Tempe Union High School District to start classes later in future years. When cooling equipment breaks down during a school session it can be expensive, costing about \$250,000 to rent and also quickly replace a chiller.
- A 2004 University of Arizona report analyzed nine school districts in Arizona and found that during the summer months, these districts pay over \$1.4 million to operate 50 elementary schools for four weeks and 25 middle and elementary schools for eight weeks, with utility costs projected to be higher over the next few years.
- More than half of all Arizona homes heat with electricity (54 percent), and about 38 percent using natural gas.
- In 2005, an estimated 27,640 households throughout Arizona received more than \$8.3 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 Arizona households needing energy assistance increased 33.7 percent in 2005-2006. Also, the Arizona Public Service approved an electric increase of 30.8 percent during this same period.
- In the Phoenix valley, residents consume about 110,000 barrels of gasoline per day, and ethanol accounts for 10 percent of that supply from November through March. It is not used during the summer.

INCREASING ENERGY PRICES SQUEEZE FARMERS AND AGRICULTURAL INDUSTRIES:



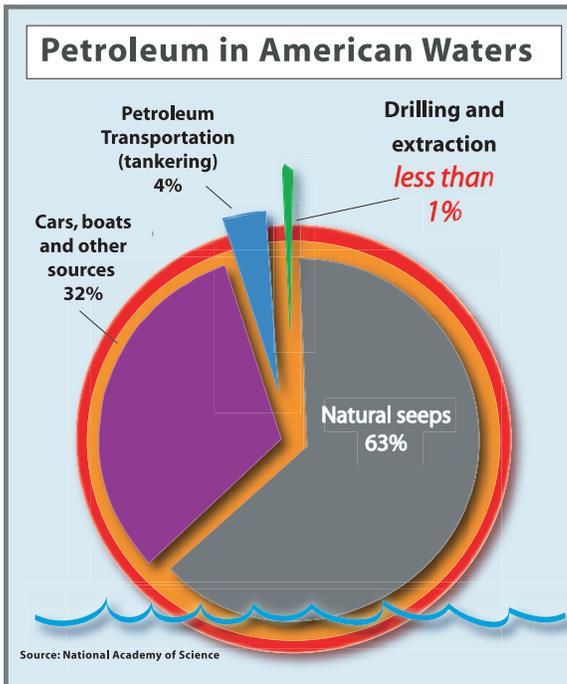
- Arizona is home to more than 10,200 farms and ranches, covering more than 26.4 million acres of farmland. In 2004, the farm economy produced cash receipts of more than \$3 billion.
- Arizona ranks third nationally for its production of fresh market vegetables. Arizona's acreage produced over \$106 million cartons of fresh produce. The state's top five commodities rank second nationally and account for almost 70 percent of Arizona's total produce production. The top five commodities are as follows: head lettuce, romaine, cantaloupe, broccoli, and leaf lettuce.
- In terms of energy's share of costs within each major production activity, 23 percent of crop production expenses were attributable to energy costs, compared with only 6 percent for livestock production outlays. Between 2003 and 2005 farmers' overall fuel and fertilizer bills rose by 47 percent, according to the U.S. Department of Agriculture.
- In 2005-2006, Arizona Cotton producers are expected to harvest 239,000 acres of upland cotton and 4,000 acres in Pima County, producing more than 650,000 bales total for the season. Cotton farmers are seeing some of the largest increases in their costs because their farms are especially energy intensive. These growers use more nitrogen fertilizer, made from natural gas, and fuel for irrigation systems and operating equipment.
- Rising energy prices have hit the Arizona irrigated crop producers especially hard. There are four energy sources typically used for pumping irrigation water in the state. They are: diesel, electricity, natural gas, and liquid propane (LP). In 2003, more than 1,095 Arizona farms and ranches spent more than \$30 million on total energy expenses for pumping.
- The cattle industry in Arizona accounts for more than 27 percent of total farm receipts. 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. Furthermore, corn, the most popular feed grain, requires large amounts of nitrogen fertilizer and irrigation water which are both sensitive to energy costs.
- 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