NATIONAL OCEAN INDUSTRIES ASSOCIATION

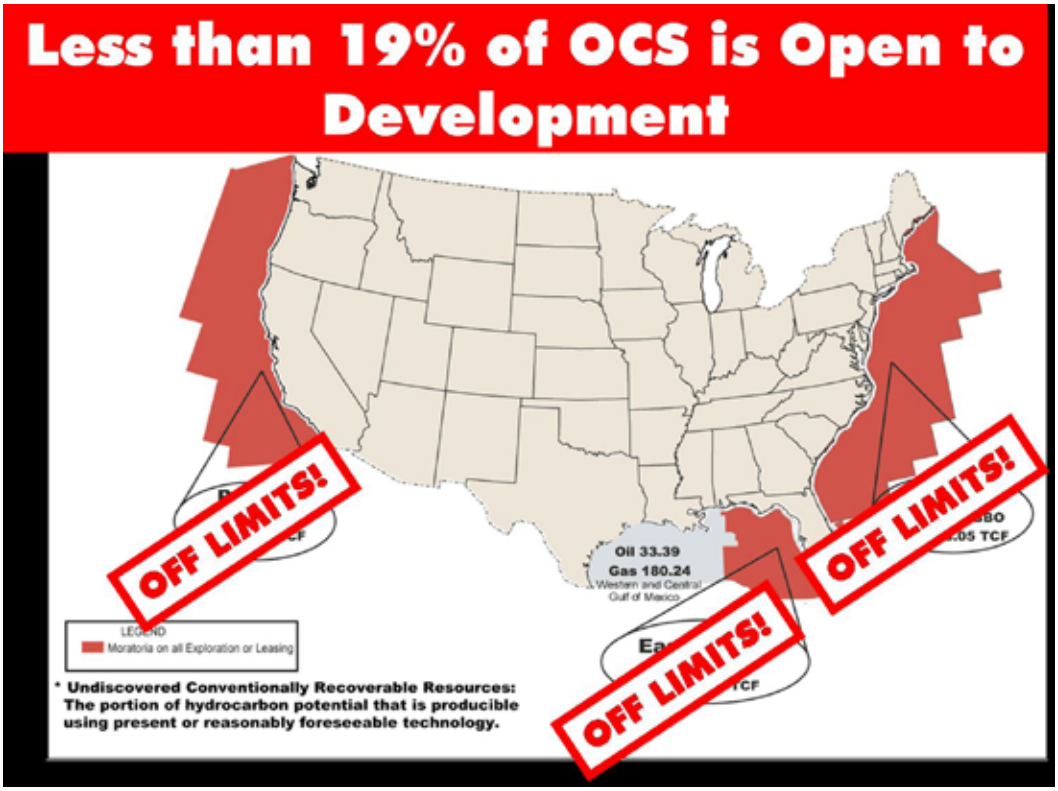
ENERGY CHALLENGES FOR TENNESSEE AND THE NATION

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.



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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 – less then 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:
  - *Petroleum by 41 percent*
  - *Natural gas by 33 percent*
  - *Coal by 41 percent*
  - *Renewable energy by 39 percent*

- In 2006, consumbers may pay as much as 48 percent more for natural gas than last year and at least 31 percent more for home heating oil.

- 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.
  - *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.

AN ENERGY PLAN OF ACTION FOR TENNESSEE

TENNESSEE ENERGY CONSUMPTION:

- Tennessee spends over $15 billion each year on energy, ranking 15th nationally in total energy consumption.
- In 2003, Tennessee's energy consumption by sector was: 34% industrial, 28% transportation, 22% residential and 16% commercial.
- Between 1980 and 2001, Tennessee's electricity consumption increased by 22 billion kilowatt-hours, averaging a 1.3% year-over-year increase.
- Coal fuels 63% of Tennessee's electricity generation, followed by nuclear (30%), hydroelectric (5%), natural gas (1%), and petroleum (1%).
- Natural gas demand in the East South Central Region – Alabama, Kentucky, Mississippi, and Tennessee – will remain high, increasing from 2.195 Bcf per day in 2007 to 2.262 Bcf per day in 2008.

TENNESSEE ENERGY RESOURCES AND PRODUCTION:

- Tennessee's natural gas production is at slightly more than 1 billion cubic feet per year, down from 5 billion cubic feet in 1984. Several major natural gas pipelines from the Gulf Coast supply the State.
- Tennessee's oil production totals about 350 thousand barrels per year, down from more than 1 million barrels in 1982.
- The State's only refinery is located in Memphis and receives its crude oil supply via the Capline pipeline, which originates in the Gulf of Mexico region.
- Tennessee has only minor coal reserves in the eastern part of the state, so the State's coal-fired power plants rely on deliveries from other states by railroad and barge.
- Tennessee is among the leading nuclear power states in the country, with two power plants located in the southern part of the state near Chattanooga.
- The single-unit Watts Bar Nuclear Plant began commercial operation in 1996 and was the last new nuclear reactor to be brought online in the U.S.

TENNESSEE ALTERNATIVE / RENEWABLE ENERGY:

- Tennessee is one of the top hydroelectric states east of the Rocky Mountains.
- The first biodiesel plant opened in Tennessee in November 2005, followed by five more plants in 2006. The range of feedstock materials for these plants includes virgin soybean oil and local yellow grease.
- In October 2006, the Governor unveiled his alternative fuels initiative that included specific steps to increase biofuels production and availability for both consumers and local governments.
- The City of Alcoa was recently awarded a grant for the installation of biodiesel pumps, and the City has since gone totally from diesel to biodiesel for their 70 city owned diesel vehicles.
- Tennessee was accepted as a Million Solar Roofs partner by the U.S. Department

of Energy when it committed to the eventual installation of 500 solar energy generation systems by the year 2010. The combined generating capacity of the 10 Tennessee Valley Authority (TVA) solar installations is over 300 kilowatts.

- The TVA currently has 18 wind power turbines, located on Buffalo Mountain near Oak Ridge, capable of producing 29 megawatts, enough power for about 3,780 homes.
- Energy from methane gas is utilized by the City of Memphis wastewater treatment facility, which produces a methane by-product that is co-fired with coal at TVA's Allen Fossil Plant. The project provides 8 megawatts of additional power production.

INCREASING ENERGY PRICES HURT MANUFACTURING INDUSTRIES, IMPERILING TENNESSEE JOBS:

- Tennessee's industries use one-third of the energy consumed in the State.
- As of November 2006, Tennessee was home to approximately 400,000 manufacturing jobs, paying employees an average of $42,800/year, 19% higher than the average for the State. Rising energy costs, however, have contributed to the loss of more than 90,000 of these high-wage manufacturing jobs since 2000.
- Chemical and plastic manufacturing – which depend on natural gas as a critical input – accounted for more than $3 billion in Tennessee exports and directly supported more than 27,000 jobs in 2005. These jobs, however, are in jeopardy due to the high price of natural gas.

Tennessee has more than 14 million acres of forested land, and its forest products industry employs nearly 40,000 workers with an annual payroll of over $2 billion.

- Today, energy is the third largest manufacturing cost, at 18%, for the forest products industry, eclipsing even employee compensation.
- Nationally, more than 230 forest products mills have closed and 180,000 jobs – 12% of the industry's national employment – have been lost since 2000, when energy prices started to rise. Likewise, many of Tennessee's paper and wood manufacturing jobs are endangered by the high price of natural gas.

INCREASING ENERGY PRICES SQUEEZE THE STATE'S UNIVERSITIES, BUSINESSES, AND INDIVIDUAL CONSUMERS:

- According to the 2007 Economic Report to the Governor of the State of Tennessee, the short term outlook for the State between 2007 and 2008 calls for slightly slower economic growth than in 2006, primarily due to factors such as high energy prices, higher interest rates, a slowdown in residential construction, and further setbacks in manufacturing.
- The University of Tennessee-Knoxville (UTK) is itself a major consumer of

electricity and natural gas. Between June 2004 and June 2005, the UTK campus required approximately 246 million kilowatt-hours of electricity, at a cost of $13 million, for lighting, air conditioning, ventilation, heating, cooking, refrigeration, computers, televisions, radios, etc. During the same time frame, the University spent $1.6 million to purchase natural gas for steam, heating and electric generation.

- Home heating costs have risen significantly, regardless of the energy source used. Electricity accounts for heating 52% of Tennessee's homes, followed by natural gas (36%), liquefied petroleum gas (7%), fuel oil (2%), and other sources (3%).
- In 2006, Congress and the State provided home heating assistance to more than 60,000 Tennessee households, a 0.7% increase from 2005.

INCREASING ENERGY PRICES SQUEEZE FARMERS AND AGRICULTURAL INDUSTRIES:

- Tennessee is home to approximately 85,000 farms (ranking fourth among all states), covering more than 11 million acres of land, and generating more than $2.5 billion in farm receipts in 2005. One-third of those receipts are derived from either cattle ($500 million) or broilers ($431 million).
- Increasing energy costs – in the form of higher prices for transportation, electricity, and related costs in the feed and ingredient processing industries – has resulted in dramatic changes in the feed and cattle industries. Furthermore, corn, the most popular feed grain, requires large amounts of fertilizer and irrigation water, both of which are sensitive to energy costs.
- One of the largest operating expenses for poultry growers is the cost of electricity. With more electrical equipment in the chicken houses, including computers, ventilation fans, automatic feeders and waterers, and lights, the electric bills keep getting higher.
- Agricultural production uses energy directly in grain production, drying, and marketing, and indirectly through many of the purchased inputs, such as fertilizer and agricultural chemicals. Many of the manufacturing industries, including agricultural processing, are also intensive energy users.
- The Economic Research Service of the United States Department of Agriculture estimates that principal crop related expenses in 2007 – seed, fertilizers, and pesticides – are forecast to be $36.1 billion, up 5 percent from 2006. This is the fourth straight increase of $1.8 billion or more.

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A PLAN OF ACTION:

What can be done to increase energy supplies?

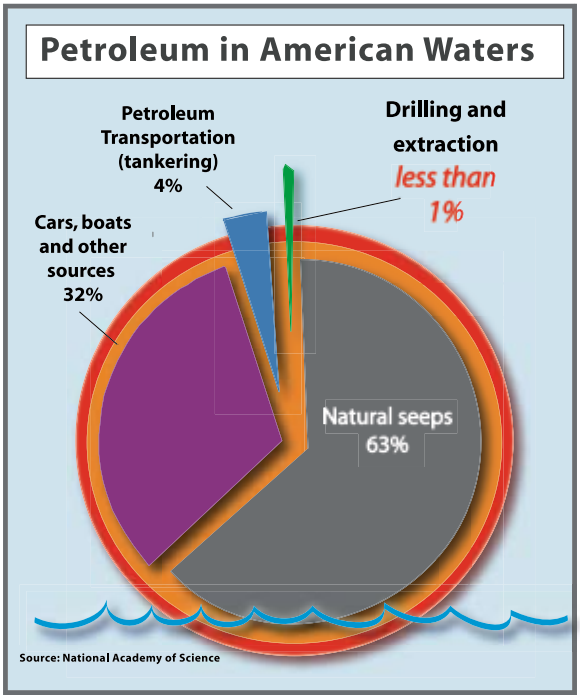
- Call on Congress and the Administration to cultivate a plentiful, diverse and affordable energy supply for America.

- 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