

# Congressional Brief: Energy

*Principal U.S. energy demands are for electricity, transportation fuels and heating. Fossil fuels also provide chemical feedstocks for fertilizers, plastics and other products. America has enough coal and natural gas supplies to meet demand for centuries. Wind and solar currently provide less than 2 percent of U.S. electric power needs, whereas coal-fired plants produce almost 50 percent. Major investments in the electric power grid will be required to meet increased demand and increase efficiency and reliability.*

## Key Facts about Energy

- Over the next 20 years, U.S. oil consumption will grow one-third and electricity demand could increase more than 45 percent.
- Comprehensive conservation and efficiency efforts would offset less than one-fourth of expected increase in future demand for electric power.
- Not counting hydro power, the rated capacity of all renewable energy combined is less than 2 percent of total generating capacity.
- Solar and wind are intermittent sources of electric power; they require redundant power plants and have the potential to decrease the reliability of the electric power grid.
- The Mining and Minerals Service (MMS) has estimated that the Outer Continental Shelf (OCS) alone contains more than 85 billion barrels of oil — quadruple current U.S. reserves — and more than 419 trillion cubic feet of natural gas.

## Key Facts About Energy Alternatives

### Coal

- Coal is abundant — the United States is the Saudi Arabia of coal, with 27 percent of the world’s reserves, enough to meet U.S. demand for more than 250 years.
- At less than 3.5 to 4 cents per kilowatt-hour the price of coal-fired electricity on the spot market is lower than any other fuel source. At less than \$2.00 per

million British Thermal Units (BTUs), as a source for electricity coal is one-fourth the cost of natural gas with one-twentieth of the price volatility.

- Coal plants are more expensive to build than natural gas plants, but are cheaper than nuclear plants.
- *Land use:* A comparison of “footprints” is telling: to produce 1,000 megawatt of power, a wind farm requires approximately 192,000 acres, or 300 square miles; a coal-powered plant takes up about 1,950 acres, 3.05 square miles; and a nuclear plant needs less than 1,700 acres, or 2.65 square miles (within its security perimeter fence).

### Nuclear Power

- Accessible uranium reserves can provide an estimated 300-year fuel supply for all the world’s existing reactors.
- One kilogram of natural uranium contains as much energy as 38.5 tons of coal, but conventional reactors only utilize approximately 3 percent of that energy. Thus, if the United States joined France and Japan in recycling used fuel, existing and future spent fuel rods would provide an almost unlimited supply of nuclear fuel.
- Another supply of nuclear fuel is also available, after reprocessing, in the more than 15,000 plutonium pits removed from dismantled U.S. nuclear weapons.

### Ethanol

- It will take 16 million acres devoted to corn — an area larger than West Virginia — to produce 5

billion gallons of ethanol annually — much less than the 9 billion gallons required in 2008 and the 36 billion gallons required by 2022.

- Turning all corn over to ethanol would displace 12 percent of gasoline. To totally replace gasoline would require devoting to ethanol feedstocks twice as many acres as are currently devoted to all crops.
- Ethanol production takes 75 percent as much energy as the distilled ethanol provides, for a net gain in usable energy of 25 percent, according to U.S. Department of Agriculture estimates. By contrast, the production of gasoline and diesel from crude oil is more efficient:
  - Only 10 percent of the energy available in a barrel of crude oil is required to transform it into gasoline (and other refined petroleum products) — 90 percent of the usable energy is left.
  - Producing oil from shale uses almost 29 percent of its available energy — more than 71 percent of the usable energy is left.
  - Transforming coal into a transportation fuel uses 40 percent of its available energy — 60 percent is left.
  - Furthermore, adjusting for the fact that ethanol contains 35 percent less energy than gasoline per volume, the net energy per gallon equivalent is only 16 percent.

## **NCPA Policy Recommendations**

- *End all energy subsidies — implement an energy neutral policy.* No public subsidies for the fossil fuel industry or special tax breaks for renewable energy projects.
- *Remove governmental barriers to the expansion of interstate and intrastate oil, gas and electricity infrastructure.* This includes pipelines and transmission lines and natural gas receiving and oil refinery facilities. “Not in my backyard” activists must not be allowed to hold America’s economic prosperity hostage.
- *Improve the reliability of the electric power grid.* The greatest barrier to reliability is the growing inadequacy of the nation’s transmission system. Expansion of the grid has been steadily falling behind increases in electrical load. Between 1979 and 1999, U.S. peak load grew 2.8 percent per year. From 1979 to 1989 transmission capacity grew 3.1 percent per year, but from 1989 to 1999 the rate fell to 0.7 percent. Annual investment in transmission (in constant dollars) has steadily declined since 1975.
- *Designate “National Interest Economic Transmission Corridors.”* These would allow power entrepreneurs to build new transmission lines to improve access to cheaper power or diversify the generation sources available. If a state imposes excessive delays, the Federal Energy Regulatory Commission (FERC) would be allowed to intervene and invoke eminent domain, as it already can for gas pipelines. This is a rare instance where federal preemption is arguably warranted.
- *Increase domestic energy production offshore and on public lands.* America’s remaining large deposits of oil and natural gas lie under public lands and offshore, but these areas have been placed off-limits to production due to environmental concerns. Technology has improved to the point that oil and gas exploration are not necessarily incompatible with environmental quality. Do not renew or implement new moratoria on offshore oil and gas production.
- *Take a balanced approach to ANWR.* The Arctic National Wildlife Refuge (ANWR) is not a wilderness area. Congress never intended to prohibit energy production in all of ANWR. The 1980 law that doubled the size of ANWR to 19 million acres expressly called for Congress to develop a process for energy exploration and production.