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THE ENERGY TO CONTINUE

We hope that NATO forces quickly punish the vicious fanatics responsible for the carnage in New York, Washington, and Pennsylvania. Anti-American acts so evil that Fidel Castro denounces them deserve a response governed by the principle of "an eye for an eye." As we wait for the news that the innocent dead have been avenged, we should also accept Colin Powell's recommendation to quickly resume our normal lives. The more our lives are disrupted, the greater the pain these terrorists will inflict on us. CAN hopes not to be misunderstood then, for turning the TV set down and shifting our attention to legislative issues that Congress will soon debate – ones with significant impact on investors.

This fall, President Bush and Congress must decide if they are going to use non-Social Security surpluses to fund increases in defense, education, farmer payments, and pharmaceutical benefits for seniors. Before the attack and prior to last week's leap in unemployment, it looked like Bush wouldn't dare, fearing any invasion would be the equivalent of his father breaking his "read my lips" pledge. Now, it's likely he will, justifying it on the two exceptions he previously laid out, war and recession.

However, with any budget settlement unlikely to be reached until Thanksgiving, CAN will use the time now to talk about legislative items that don't cost much federal money but are important to investors. Today's topic is the Bush energy plan, with a review of the bid-ask spread between the GOP and Senate Democrats on important subsectors, in this order: oil, natural gas, coal, alternative energy, electric utilities, including nuclear, and electric appliances.

America Has Plenty of Oil

America's reliance on imported oil has been growing for many years, but this is a matter of choice. Currently, America consumes 20 million barrels of oil daily, but produces less than 10 million each day. Having drilled 3 million oil wells in the lower 48 over the last 150 years, engineers know exactly where 350 billion barrels of the stuff is. That equals 48 years of supply based on our current consumption rate. Even this number is an understatement. Another 500 billion barrels is encased in oil shale, mostly in the Green River Basin, located in Colorado, Utah, and Wyoming.

The problem isn't supply, it's price. The cheapest way to get oil out of the ground is to let natural reservoir pressure push it up. The problem is that as oil flows out, reservoir pressure falls and eventually oil stops flowing. It's not uncommon for this to happen after only 10 percent of the oil has been drawn out. Once this occurs, it costs more to keep the oil flowing. Enhanced oil recovery techniques, like injecting carbon dioxide gas, water, or steam into the wells, boost recovery percentages but at a price.

The Department of Energy's Energy Information Agency has published a chart that shows that the elasticity supply of domestically produced oil is about 1. To achieve oil independence, the U.S.

would have to boost annual output by 50 percent, from 10 million barrels per day to 15 million barrels, and simultaneously cut consumption 25 percent, from 20 million down to 15 million, probably by accelerating the introduction of electric/gasoline hybrid automobiles. A 50 percent long term price rise would achieve both; America would achieve oil independence around $37 per barrel. At even higher prices, the U.S. would *export* oil. By relying on NAFTA partners Canada and Mexico, independence could be achieved at about $33 per barrel. Practical independence would cost oil consumers $50 billion more a year, about 0.5 percent of GDP. Actually, the net cost would be lower. Defense spending could be cut if resources weren't needed to police the Persian Gulf to insure oil flows to America's refineries from Iraq, Iran, and Saudi Arabia. However, Washington policymakers are so allergic to oil price increases that they would rather risk more Desert Storms than beef up the domestic industry by raising prices. This has significant implications for investors.

For Republicans, it means that the best way to lower reliance on foreign oil is to open up acreage in the federal inventory to drilling such as the Alaskan Wildlife Refuge (ANWR), and to subsidize domestic producers and some conservation efforts. The Administration-backed HR 4, the *Securing America's Future Energy Act of 2001*, passed the House on August 2 by a margin of 240-189, continues this tradition. It contains two major oil tax breaks. First, it grants deep water drillers in the Gulf of Mexico a two-year royalty holiday on any new wells drilled after the law takes effect. Under current law, after making winning bids and making up-front bonus payments to acquire leases, such producers have to fork over 12.5 percent of their oil to the feds. Second, 20 percent of domestic production comes from America's 400,000 "stripper wells." These generate perhaps only 10 barrels per day, about $100,00 worth a year, but can do so for decades. Even some oil majors get 20 percent of their domestic supplies this way. HR 4 provides subsidies, worth up to $3 per barrel, for stripper producers whenever prices fall below $15 per barrel. Finally, as CAN discussed in its earlier energy paper, the GOP would use HR 4 to persuade consumers to buy hybrid auto engines that can double gas milage by offering tax credits. Out of character, the GOP has also asked Detroit to raise corporate average fuel efficiency (CAFE) standards on Sports Utility Vehicles, but only by a negligible amount.

Senate Democrats have yet to make a counter offer to HR 4. However, we shouldn't have long to wait. Responsibility for developing their counteroffer wrests with Max Baucus (D-MT), Chairman of the Senate Finance Committee and Jeff Bingaman (D-NM), who chairs the Energy Committee. Both have promised to push through packages by the end of September. Today, it seems most likely they will back raising CAFE standards and possibly back the hybrid engine credit. Oil drilling in ANWR is expected to carry in Bingaman's Committee 12-11, but then be defeated on the Senate floor.

The most likely result is a little of everything: some help for deep water drillers, some help for stripper producers when prices tumble, some subsidies for hybrid engine producers, and higher CAFE standards that will help Japanese producers who have excess CAFE credits while hurting American companies. ANWR drilling remains too close to call.

<u>Natural Gas – Washington's favorite fossil fuel</u>

Natural gas scarcity is not a national security concern. U.S. producers supply 85 percent of the domestic market while eager Canadian suppliers send us the balance. There are few nasty toxic byproducts from burning the stuff. Meanwhile, coal and oil combustion releases 4 times and 2 times the amount of carbon dioxide, the global warming “pollutant,” into the atmosphere per Btu generated compared to natural gas. Its environmental advantages probably explains why 90 percent of government approved new electric utility plants will be fired by natural gas.

Under HR 4, House Republicans offer owners of natural gas stripper wells floor price protection, just as they do for stripper oil. The GOP also approves of building a natural gas pipeline from Alaska’s North Slope, and prefers a plan that runs exclusively through that state unless Canada makes enough concessions to justify running near their own large gas fields. Senate Democrats especially value natural gas due to its environmental advantages. They also back building the North Slope natural gas pipeline. The most likely result is a natural gas friendly energy bill.

Coal is Not a Long-Term Hold

Due to both technological advancements and environmental concerns, the long-term prospect for the $22 billion coal industry is frankly, as black as coal. Ninety percent of mined coal is used to fire electric utility plants. Although electricity demand is slowly growing, almost none of the new generation will be fueled by coal. Furthermore, generators who install off-the-shelf combined heat and power systems can almost double the amount of electricity they produce from a given amount of coal. Over time they will do so.

Both the Environmental Protection Agency and Senate Democrats are gearing up to force tougher environmental standards on electric utilities. Republicans and Democrats will agree to considerably stiffer limits on sulphur dioxide, nitrous oxides, and mercury emissions. Senate Democrats want carbon dioxide added to the list of pollutants utilities must control, but the White House so far is resisting. Burning coal produces all four harmful byproducts. The utility industry is sitting behind closed doors currently to work out acceptable terms of surrender with the government and environmental groups. Its key objective is to buy long-term peace. Once the new rules are adopted, the utilities don’t want them reopened. Retrofitting is expensive.

About the only good news is the Bush Administration’s proposed “clean coal initiative.” The Administration wants to spend over ten years $2 billion on a research and development program. If funded, this will produce a subsidized R & D effort equaling 1 percent of sales revenue. Most of this money will explore the feasibility of “coal gasification.” This process turns coal into gas, and it is hoped, allow more efficient use of coal and cost effective removal of pollutants. With Senator Byrd (D-WV) chairing the Appropriations Committee, it seems likely this project will enjoy favorable funding for the foreseeable future. The House GOP also will serve up 10% tax credits to companies that use clean coal technology.

The Bush Energy Plan Keeps Alternative Sources Only Slightly In the Mix

The Age of Fossil Fuels will end one day, probably around 2040, when fusion power can be safely harnessed. It only takes one unit of energy to ignite the thermonuclear fusion of two hydrogen atoms into one helium atom with 100 units of energy released in the process. The problem is continuing and controlling the reaction. This is as close as humans are likely to get to building a perpetual motion machine. Unlike fission, fusion also will produce little radioactive waste, and there is an inexhaustible supply of hydrogen. Barring an engineering breakthrough, wind, solar, biomass, and geothermal power are unlikely to ever contribute much to the nation energy equation. True, there are places where wind energy has a future, like North Dakota, when farmers can profitably put large turbines on their land. Other areas are unusually sunny or near hot springs. However, the cost of such energy at the moment in most areas seems destined to remain about twice the cost of using fossil fuels, even after decades of federally subsidized research.

To avoid the tag of being hostile to green energy, the Bush Administration favors the continuation of modest tax credits to those who use such systems on a retail basis to power individual homes or modest commercial enterprises. Senate Democrats will do what is necessary to prove they are stronger supporters of renewable energy than the "Grand Old Petroleum" party. However, shareholders of Exxon or El Paso have little to fear.

Going for Green In Electric Appliances

To buttress their credentials on conservation, House Republicans included in HR4 provisions to cut back on "vampire power." This is their name for power lost when appliances like computers and VCR clocks consume 4 watts of power even in the "off" position. The appliance industry is hopping mad because moving to a 1 watt standard will cause costly re-engineering. It will be even madder since it's likely to be part of any bill that reaches Bush.

Electric Utilities Will Be In the Commodity Business

By design, HR 4 is silent on electric utility restructuring and most nuclear power issues. House Energy and Commerce Committee Chairman Billy Tauzin (R-LA) has stated the Committee will report out a separate bill addressing utilities in the weeks ahead. However, Senate Democrats plan on including an electric utility restructuring bill and legislation addressing nuclear power as part of one comprehensive energy bill that clears the Senate. Therefore, it seems likely that any bill that reaches Bush's desk will have all of this.

Perhaps the most important issue confronting utility reformers is how to prevent another California-type crisis. At the peak of the crisis, Californians could not buy juice at ten times the going rate. The reason was a lack of transmission capacity, not the sudden loss of the work ethic among electricity producers elsewhere in the country. Currently, there are four major grids serving the lower 48, including one in the Midwest that links up with Canada. Local surpluses and shortages within a grid cancel out as long as the whole grid has net, excess capacity. Earlier this year, the western grid lacked net capacity, and there even was a transmission bottleneck between northern and southern California. Whenever a grid lacks capacity, the other three have limited ability to supply it because the connections *between* grids are not robust.

The Bush Administration wants to create one national electric grid by upgrading transmission lines inside all four grids and also between the grids, but it lacks the legal power to site high voltage electric wires over local objections. Therefore, the Administration is seeking the power of eminent domain to enhance the grid. If Congress approves, then cutthroat price competition among electricity generators will break out once the national grid is functioning. It's hard to imagine a more uniform commodity than electricity. Only price will matter. Long-term investors should purchase the securities of low cost generators and dump those who are less efficient if plans to build the national grid take off. Bingaman's draft bill, due out this month, will tell us if they will get the chance.

Another major issue facing utility reformers is what to do about large utilities subject to the onomatopoetically named PUHCA bill. The Public Utility Holding Company Act restricts the opportunities of the largest regional companies to diversify into other lines of business. This Depression era law was designed to prevent dominant utilities from using their alleged monopoly rents to cross subsidize entry into unrelated markets. *If a bill reaches Bush, it will include repeal of PUCHA.*

Going Nuclear

Operators of nuclear power plants have other issues to worry about. Perhaps the most important is continuation of the Price Anderson Act. This law requires plant operators to pay premiums into a pool to cover the cost of a major accident. The pool pays everything up to a catastrophic limit. The federal government is on the hook for amounts above that. The operators of the nation's 103 nuclear power plants want this law extended since fully private insurance with be very costly despite the industry's excellent safety record. The GOP backs an extension, but no one knows Bingaman's position. Most expect the New Mexico Senator to back it given the large role nuclear energy plays in his state's economy. The Bush Administration also wants to grant $1 billion in tax relief over ten years through a technical change in how payments into mandatory nuclear power plant decommissioning funds are treated. This is unlikely to survive a House-Senate Conference.

There is bullish news for nuclear power plants. Virtually every one is likely to get a new lease on life when its 40 year license come up for a possible 20 year renewal. Before the 2000 election, most observers thought many would be shut down after 40 years. However, the Bush Administration is a friend of nuclear power. They will stay open.

The Energy Bottom Line

There's a 60/40 chance that energy reform passes in this Congress. If it does, the outlook is bullish for nuclear power operators, very large utilities, deep water drillers, and the most efficient electric utilities if any bill passes. Coal faces considerable downside risk.

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