Consumer Federation of America

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A BOOM FOR BIG OIL --- A BUST FOR CONSUMERS

AN ANALYSIS OF POLICIES TO MEET AMERICAN ENERGY NEEDS

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A KEY MOMENT IN ENERGY POLICYMAKING

After both houses of Congress failed narrowly to achieve the necessary super majorities to pass legislation to address concerns about speculation in oil markets, a spate of pundits and politicians commented on the failure of this session of Congress to do anything on energy policy.[1] A fiery debate over offshore drilling followed quickly, with sharp exchanges over the role of conservation in energy policy.[2] In the midst of the back and forth, the oil companies announced another round of record profits, adding further fuel to the fire and leading to suggestions that excess oil company profits could fund energy policies.[3]

A *Wall Street Journal/NBC News* public opinion poll (August 21, 2008) conducted a few weeks after Congress recessed showed a mixed impact of the highly charged debate.[4] Interestingly, when asked which policy "will accomplish a great deal in dealing with America's energy needs," fewer than half the respondents (44 percent) said drilling for oil, while large majorities said alternative fuels (72 percent) and more fuel-efficient cars (65 percent). A second question, that asked, "which one of the following do you think should receive the most emphasis" shows even more dramatic results. "Developing alternative energy sources" was cited by 61 percent of the respondents. "Exploring and drilling for oil in the United States" was cited by 25 percent of the respondents. "Having Americans conserve and use less oil" was cited by 12 percent. Unfortunately, fuel economy was not given as an option.

The public poll results are ironic in several respects. First, while the Bush Administration is touting drilling, data from several executive branch agencies including the Energy Information Administration (EIA) and the National Highway Traffic Safety Administration (NHTSA) indicates that other policies – like efficiency, conservation and alternatives – have a greater potential to make a much larger contribution "in dealing with America's energy needs" (see the above Figure shows).[5]

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[1] For a compilation of press and poll see "House Republican National Energy Protest of Do-Nothing Democratic Congress," *GOP.gov*, August 13, 2008.

[2] See for example Carla Marinucci, "Tire Gauge Pumping up Campaign Rhetoric," SFGate.com, August 5, 2008, http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/08/04/MN1S124RIS.DTL

[3] Tom Bergin and Michael Ermna, "Oil Company Profits Soar," *Reuters*, August 1, 2008; "Obama Plans to Grab Oil Company Profits," *World Net Daily*, August 1, 2008.

[4] Stephen Powers, "Voters Want Everything on Energy," *New York Times*, August 21, 2008, A9.

[5] See discussions below for derivation of these estimates. The source and major assumptions are as follows.

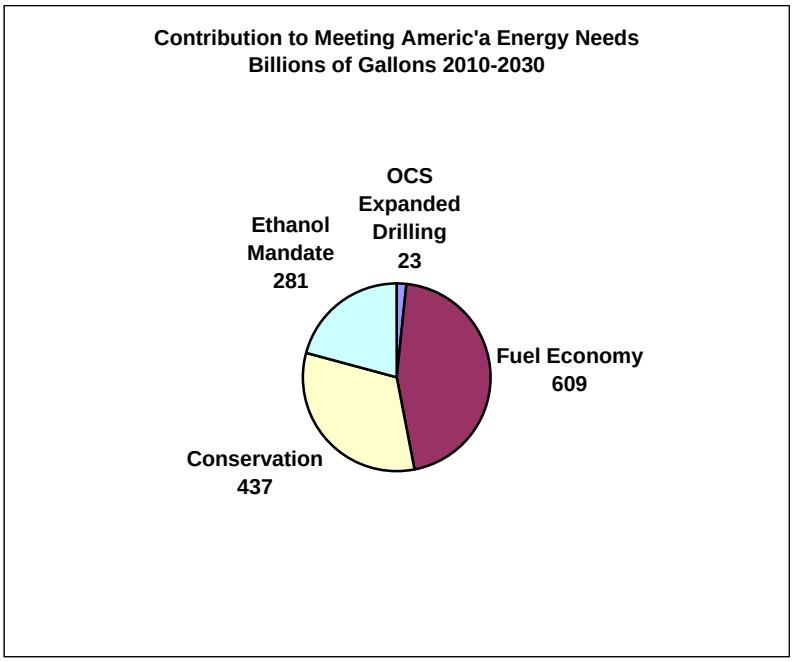
OCS: Energy Information Administration, *Annual Energy Outlook: 2007, Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf*, (Washington D.C.: February 2007), p. 51.

Fuel Economy -- National Highway Traffic Safety Administration, *Preliminary Regulatory Impact Statement, Notice of Proposed Rulemaking, Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011-2015*, 73 Federal Register 24352, May 2, 2008, *Appendix* Table A-1 for fuel economy levels, table 6 for fuel savings. Trends are based on percentage increase in fuel economy in the 2013-2015 period. The maximum feasible trend growth is 4 percent per year, which is lower than the highest trend analyzed in National Highway Traffic Safety Administration, *Cafe Compliance and Effects Modeling System*, Documentation (Draft, 5/26/06). The proposed trend is 1.6 percent per year.

Conservation -- Tips to Taking the Sting out of High Gasoline Prices, *Energy Matters*,

- Efficiency, conservation and alternatives deliver over 50 times as much oil savings as expanded drilling can produce.

- Measured by reductions in emissions of global warming greenhouse gasses, which has also played a role in the energy policy debate, expanded drilling does no good whatsoever. Efficiency and conservation can reduce emission by over 11 billion metric tons of carbon dioxide, the dominant greenhouse gas, over the 20-year period.



Second, the claims that propelled drilling to the center of the debate – that it would lower gas prices or significantly reduce oil imports – are not supported by the Bush Administration's own analysis. In these analyses, the largest reduction in imports is less than 2 percent at the peak of production and the price benefit is so small EIA called it insignificant and did not even quantify it.

Ironically, as Congress was being pummeled for not responding to consumer pain at the pump, it had actually adopted the two policies most effective in dealing with America's energy needs and the two policies the public supports most strongly (expanding alternatives

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Facts & Tips from the U.S. Department of Energy (FEMP focus, summer 2005) http://www1.eere.energy.gov/femp/newsevents/fempfocus_article.cfm/news_id=9364, Consumer Federation o f America, *Ten Ways Drivers Can Cut Gasoline Costs and Gas Consumption*, estimates the cumulative conservation at 13% available at http://www.consumerfed.org/pdfs/gas_tips.pdf

Ethanol -- The base case ethanol production is set at 7.5 billion gallons per year, per the Energy Policy Act of 2005. The renewable fuel standards in the Energy Independence and Security Act for the relevant years are as follows. The cumulative total is multiplied by .67 to account for the lower heat content of ethanol, although the octane boosting, antiknock and burn characteristics of ethanol yield higher mileage than a simple BTU comparison suggests.

and setting higher fuel economy standards) when it passed the Energy Independence and Security Act of 2007 (EISA). In short, expanded drilling can make a minuscule contribution in dealing with America's energy needs and the policy debate has vastly over-hyped its likely role. Instead, public attention and political pressure should focus on rigorous implementation of EISA to ensure maximum oil savings are captured.

It is frequently said that America only implements meaningful energy policy in response to a crisis, but our analysis shows that if expanded drilling is all that comes of the current crisis, it will be worse than meaningless – it will be an opportunity squandered. To really provide relief to consumers and address America's energy needs, the Administration must faithfully execute the Energy Independence and Security Act as mandated by Congress.

This paper examines the essential elements of the policy debate from several points of view. It estimates the relative contribution in meeting America's energy needs that can be expected from four key policies – expanded drilling (on the Outer Continental Shelf), raising fuel economy standards to reduce gasoline consumption, conserving energy by improving vehicle maintenance and driving practices, and the contribution of alternative fuels mandated by EISA. It examines the likely effect of expanded drilling on consumer prices and oil company profits. It focuses on the drilling v. efficiency/conservation policy contrast.

The basic data comes from federal agencies. The data that shows it is economically feasible to reach higher fuel economy standards comes directly from National Highway Traffic Safety Administration (NHTSA), which is required to analyze a full range of possibilities in its rulemakings. The Energy Information Administration (EIA) has published estimates of the potential energy savings from various conservation measures. The data on expanded oil production on the Outer Continental Shelf (OCS) also comes from EIA. Heretofore, the data has not been put together on a consistent basis. The underlying data supports a consistent comparison for the twenty-year period of 2010-2030.

EXPANDED DRILLING

In the 2007 *Annual Energy Outlook*, the Energy Information Administration analyzed the increase in oil production that would result from allowing drilling in areas of the OCS.[6] The OCS analysis was conducted as part of the EIA *Annual Energy Outlook: 2007*. EIA concluded that production would not begin until well into the next decade and it analyzed the impact on oil production through 2030, which is the time frame it used for its *Annual Energy Outlook*.

[6] Energy Information Administration, *Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf*, (available at http://www.eia.doe.gov/oiaf/aeo/otheranalysis/ongr.html)

The EIA concluded that expanded drilling on the OCS would increase overall domestic production by 1.6 percent in the period between 2012-2030.[7] This is .7 percent of the total consumed over the period. This is equal to approximately 23 billion gallons.

There are three reasons why the projected additions to supply are small.

First, the vast majority of oil prospects in the U.S. are already open to drilling. This is particularly true of the OCS, which represents about half of the total U.S. production. About 80 percent of oil likely to be found on the OCS is already available for development.[8]

Second, the oil exploration and development sector is already going at full throttle.[9] In the short-term, the primary impact of expanded drilling will be to move existing assets from their current employment to other areas. While these areas might be slightly more attractive, they will not produce a great deal more oil.

Third, the U.S. resource base is beyond mature and it was always constrained. The new oil reserves to be found are small. It is such a small percentage of U.S. and global supply that the EIA estimated that expanded drilling in these areas is projected to increase global production of oil by less than 1 percent at its peak in the mid-2020s.

Whether the consumer will benefit directly from the expanded drilling depends on whether oil produced as a result of the increase in domestic U.S. production will have an impact on the world price of oil. Unfortunately, the prospects of a consumer benefit are slim because the increase in production is so small compared to the global demand. As the EIA report put it with respect to the Outer Continental Shell, "Because oil prices are determined on the international market, however, any impact on average wellhead prices is expected to be insignificant."[10] The addition to global supply from expanded drilling in the OCS is less than two-tenths of one percent of global supply.

In short, consumers and the nation need to look elsewhere for major relief from the current crisis.

FUEL ECONOMY

The Energy Independence and Security Act was widely heralded as a major step in the battle against the nation's oil addiction,[11] when enacted in December 2007, because it raised

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[7] Total consumption is taken from the reference case, Energy Information Administration, *Annual Energy Outlook: 2007.*

[8] EIA, Impacts of Increased Access.

[9] "US Drilling Activity Falls from 23-year High," *Oil and Gas Journal*, September 6, 2008.

[10] Id.

[11] The White House Fact Sheet on the Energy Independence and Security Act (December 19, 2007) describes it as follows." It represents a major step forward in expanding the production of renewable fuels, reducing our dependence on oil, and confronting global climate change. It will increase our energy security, expand the production of renewable fuels, and make America stronger, safer, and cleaner for future generations." CFA pointed out that the impact of EISA depended on its implementation by the executive branch ("Historic Energy Bill Passed Today – Impact Depends on Agencies," December 18,

fuel economy standards for light duty vehicles (i.e. cars, light trucks and SUVs) for the first time in two decades.

EISA set a minimum target of increasing fuel economy for cars and light trucks from an average of about 27 miles per gallon today to 35 miles per gallon by 2020. But, 35 mpg was a floor, not a ceiling, and the law requires the National Highway Traffic Safety Administration (NHTSA) to set the standard at the maximum feasible level. Unfortunately, NHTSA failed to do so. NHTSA did not propose to increase fuel economy standards to the maximum feasible level because its analysis is riddled with flaws.

NHTSA has vastly undervalued the fuel savings that would result from higher fuel economy standards.

- NHTSA uses a price for gasoline in 2015 that is $2.45 per gallon, substantially below the price being paid today.
- It assumes that oil has no military or strategic value whatsoever.

NHTSA has failed to understand consumer behavior and has ignored obvious trends in the market, which lead it to underestimate the ability of the market to improve fuel economy.

- NHTSA assumes that consumers won't buy smaller cars with fewer cylinders, avoid hybrids, don't pay more for more fuel efficient used vehicles and irrationally burn up their fuel savings on increased driving. All of NHTSA's assumptions are contradicted by current consumer behavior.
- NHTSA bases its standards on product production plans that the automakers are currently tearing up and assumes that automakers are incapable of making significant changes in their production plans, even though the automakers are currently making dramatic changes.

NHTSA fails to follow the mandate of Congress and give proper consideration to the need of the United States to conserve energy.[12] Under the statute, it should have set the standard at a level that maximizes fuel savings at no net cost to society. It chose to maximize economic value rather than fuel savings.

Because the NHTSA analysis of fuel economy is part of the rulemaking, it is required to consider a range of alternative levels at which it could set the standard. Thus, we have estimates of how much oil could be saved if NHTSA sets the fuel economy standards at the proper maximum level. NHTSA proposes that the fuel economy standard for cars and light trucks be set at an average of 31.6 mpg in 2015. Given consumer demand over the last three

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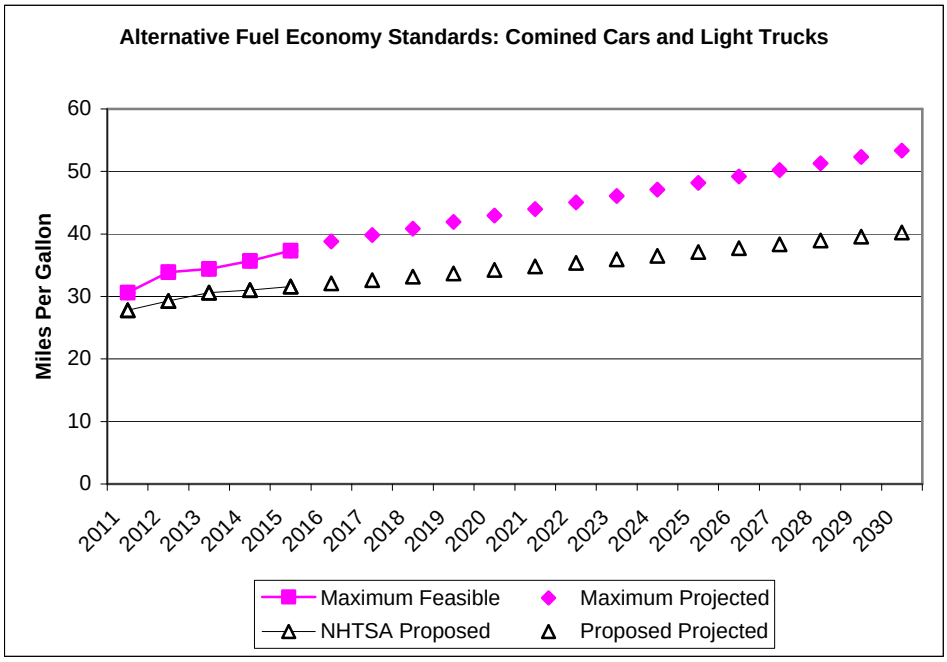
2007). "The 2007 *Energy Independence and Security Act* just enacted by Congress has the potential to lower consumer costs, reduce oil consumption and imports, and cut global warming green house gas emissions, but only if these new standards are aggressively implemented by executive branch agencies.

[12] Comments and Technical Appendices of the Consumer Federation of America, *Notice of Proposed Rulemaking, Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011-2015,* National Highway Traffic Safety Administration Docket No. NHTSA 2008-2009, RIN 2127-AK29, July 1, 2008.

years, this is a remarkably low number. In fact, if NHTSA's assumptions more accurately reflected today's market, they would set the maximum feasible light duty vehicle fuel economy standard for 2015 at 37.3 mpg. In a recent survey we found that the standard set by NHTSA for seven years hence calls for vehicles that achieve fewer miles per gallon than consumers are demanding today.[13] According to a CFA survey, consumers say they would like their next new car to achieve 32.6 miles per gallon.[14]



To make a comparison of oil savings achieved by maximum feasible fuel economy standards to the oil production estimates from OCS drilling discussed above, we must extend the analysis to 2030. We did so by projecting a constant rate of improvement from 2015 to 2030, as the accompanying Exhibit shows.[15] This projection brings new light duty vehicles to

[13] Mark Cooper, *Fuel Economy and Auto Sales: Automakers and the National Highway Traffic Safety Administration Ignore Market Signals*, August 2008, pp. 4-8; available at http://www.consumerfed.org/pdfs/CAFE_and_Auto_Sales.pdf
Mark Cooper, *Ending America's oil Addiction: A Quarterly Report on Consumption, Prices and Imports: First Quarter, 2008, available at*, http://www.consumerfed.org/pdfs/First_Quarterly_Gas_Report_2008.pdf

[14] Id.

[15] Fuel Economy -- National Highway Traffic Safety Administration, *Preliminary Regulatory Impact Statement, Notice of Proposed Rulemaking, Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011-2015*, 73 Federal Register 24352, May 2, 2008, *Appendix* Table A-1 for fuel economy levels, table 6 for fuel savings. Trends are based on percentage increase in fuel economy in the 2013-2015 period. The maximum feasible trend growth is 4 percent per year, which is lower than the highest trend analyzed in National Highway Traffic Safety Administration, *Cafe Compliance and Effects Modeling System*, Documentation (Draft, 5/26/06). The proposed trend is 1.6 percent per year.

an average of just over 53 miles per gallon in 2030. Our earlier analysis indicates that this level is quite achievable.[16]

Projecting the fuel savings from the maximum feasible standard in the NHTSA analysis, we estimate that this steady improvement in fuel economy would save 609 billion gallons of gasoline in the period 2010 to 2030. This is over twenty-five times as much as expanded drilling. The difference between NHTSA's proposed standard and a properly defined maximum feasible standard is 280 billion gallons, more than ten times the increase in production from expanded drilling.

CONSERVATION

Gasoline savings tips have been a hot topic for the past several years, as prices have skyrocketed, but the amount of attention they are receiving in the Presidential campaign is extraordinary. While the exchanges between McCain and Obama have focused on the importance of inflating tires, there is a range of actions consumers can take to cut their gasoline consumption and the nation's oil consumption. Ironically, even though tire inflation yields a small amount of fuel savings compared to some of the other measures, according the U.S. Department of Energy (U.S. DOE),[17] it actually can contribute more to meeting the nation's oil needs than expanding drilling on the Outer Continental Shelf, as the accompanying table shows. A tune up can save over four times as much oil as tire inflation.

Conservation Measures to Reduce the National Oil Addiction

Action	Percent Reduction in Consumption
Mechanical Fixes	
Inflate Tires	1.5%
Tune up engine	4.5%
Fix a broken oxygen sensor	6.7%
Behavioral Changes	
Slow down 5 mph (above 60mph)	2.0%
Don't drive aggressively	8.6%

Tips to Taking the Sting out of High Gasoline Prices, *Energy Matters*, Facts & Tips from the U.S. Department of Energy (FEMP focus, summer 2005)

Slowing down by five miles per hour at speeds above 60 miles per hour or not driving aggressively saves even more gasoline. These four measures are a subset of the things that people can do to lower their fuel consumption. Additional measures include steps such as proper front-end alignment, repairing broken gas caps, removing excessive weight. In fact, there are a number of other tips for gasoline savings available at:

http://www.consumerfed.org/pdfs/gas_tips.pdf or the links on the DOE FEMP page.

[16] Mark Cooper, *50 by 2030* (Washington, D.C..: May 2006), available at http://www.consumerfed.org/pdfs/50_by_2030.pdf

[17] In addition to EIA, "Tips to Taking the Sting out of High Gasoline Prices," *Energy Matters*, Facts & Tips from the U.S. Department of Energy (FEMP focus, summer 2005) http://www1.eere.energy.gov/femp/newsevents/fempfocus_article.cfm/news_id=9364 see http://www.consumerfed.org/pdfs/gas_tips.pdf

To calculate the fuel savings achieved by personal action[18], we have estimated the full range of mechanical and behavioral steps that could lower gasoline consumption and calculated these steps could cut demand by 13 percent.[19] Applying this figure to the consumption projections in the *Annual Energy Outlook*, we estimate gasoline savings of 437 billion gallons over the 20-year period. This is about 19 times as much as expanded drilling.

ENERGY INDEPENDENCE AND SECURITY ACT ETHANOL TARGETS (Billion Gallons)

Year	Target
2011	13.95
2012	15.2
2013	16.55
2014	18.15
2015	20.5
2016	22.25
2017	24.0
2018	26.0
2019	28.0
2020	30.0
2021	33.0
2022 – 2030	36.0

Taken together, the demand-side (efficiency and conservation) can save over 1 trillion gallons of gasoline over the 20-year period. This is a contribution to meeting America's energy needs that is about 45 times as large a contribution as that provided by expanded drilling.

The alternative fuels mandate included in the Energy Independence and Security Act requires a five-fold increase in the level of ethanol by 2030, primarily from cellulosic raw materials, according to the schedule in the accompanying table. However, each gallon of ethanol equals about two-thirds of a gallon of gasoline, so the effective substitution for gasoline is about 280 billion gallons over the period, over ten times as much as expanded drilling.

Thus, the oil savings generated by demand-side measures and alternative liquid fuels expansion total about 1.3 trillion gallons, or over 50 times as much as expanded drilling.

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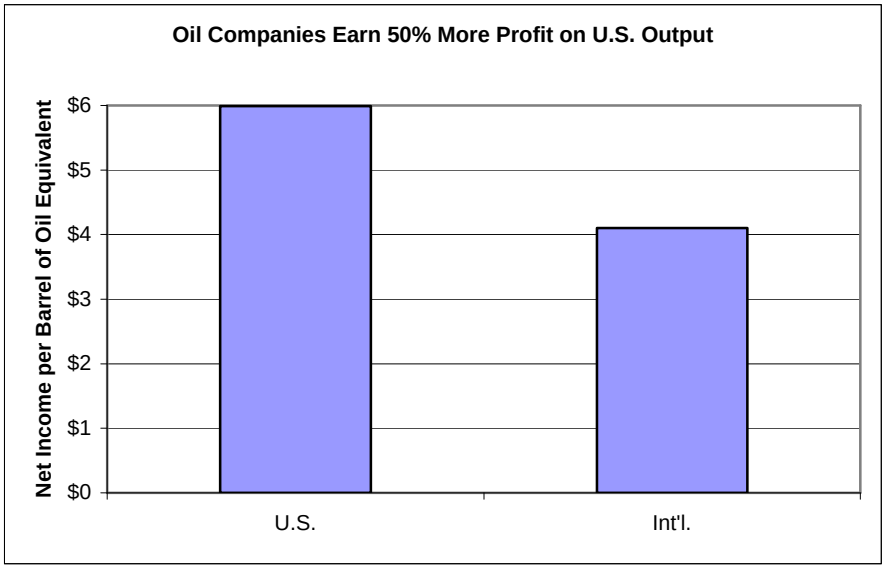
The meager impact of expanded drilling on production and prices might lead one to wonder why oil companies fight so hard to lift the restrictions on drilling. The answer is simple; they make a lot more money when they produce oil in America than when they produce oil abroad as the following figure shows.

As noted by the EIA analysis of expanded drilling, the price of oil is set in the world market. Oil companies charge roughly the same price for oil produced in the U.S. as they do for oil produced abroad. That is, they all charge the world price with minor differences for quality and transportation costs. In the first half of 2008, price was just over $100 per barrel, about $45 per barrel more than the comparable period of 2007. The cost of finding and producing crude oil did not increase anywhere near that rate in the past year, so oil company profits have skyrocketed. Indeed, oil company executives recently testified that the cost of

[18] These savings are dependent upon personal initiative and we do not know exactly how many people have altered their behavior already to lower gasoline consumption.

[19] Oil Consumption and production figures are take from *Annual Energy Outlook: 2008,* (Washington, D.C., June 2008**)**, reference case. Tips to Taking the Sting out of High Gasoline Prices, ENERGY MATTERS, Facts & Tips from the U.S. Department of Energy (FEMP focus, summer 2005) http://www1.eere.energy.gov/femp/newsevents/fempfocus_article.cfm/news_id=9364

producing crude oil is only between $35 and $65 per barrel at the margin,[20] although the average cost is about considerably less than that. The price or over $100 per barrel is far in excess of costs and the oil companies pocket the price differences as profits.



Oil companies make much more on domestic U.S. oil than they do on oil produced in foreign countries. In the first six months of 2008, their net income on oil and natural gas was 50 percent higher on U.S. production than on international production (as the accompanying figure shows).[21] The reason they earn so much more on U.S. production is that the royalties and transportation costs are lower. Or, stated another way, foreign countries collect more from oil companies in the form of higher royalties and taxes than do US and state governments on behalf of US taxpayers. Thus, the immediate effect of allowing more U.S. production will be to increase oil company profits.

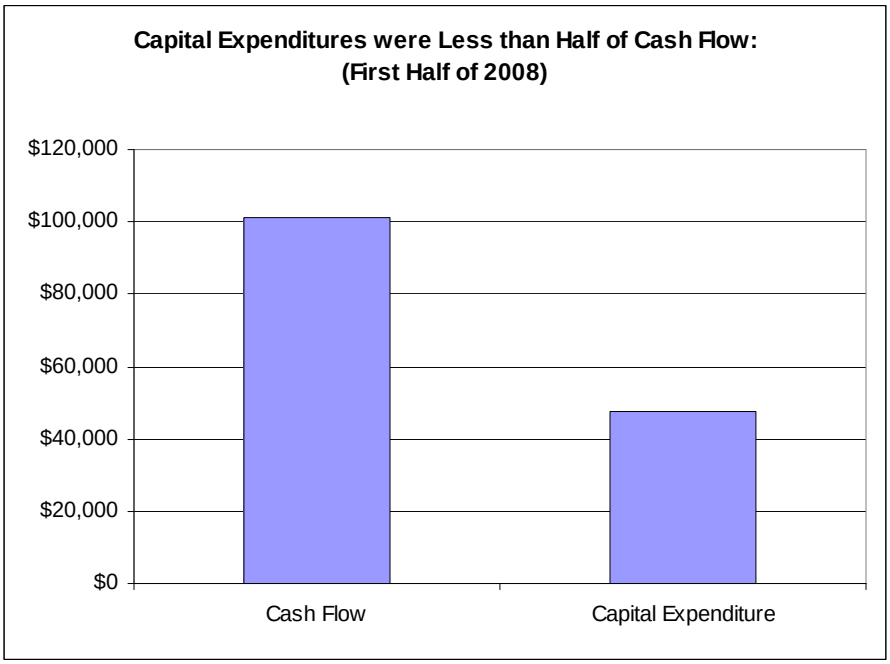
As the following Figure shows the massive increase in prices and profits creates a cash flow problem for the oil companies; they have too much of it to absorb.[22] . In the first half of

[20] J. Stephen Simon, Senior Vice President ExxonMobil, Select Committee on Energy Independence and Global Warming, put the cost at $50-$55. John Hofmeister, President of Shell Oil Co. put the cost at $35-$60 per barrel. Other experts confirm this conclusion. Energy Information Administration, *Annual Energy Outlook: Retrospective Review, Evaluation of Projections in Past Editions (1983-2006), Annual Energy Outlook, 2008* puts the landed cost of crude ate about $60 per barrel. Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008), p. 5, The average WTI "fundamental price," consistent with the underlying supply/demand situation, was around $US60/barrel during the December half-year. Adam Siemiski's Testimony Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, p. 7, suggests a cost of $70, at the margin.

[21] Second Quarter Press Statements, ChevronTexaco, Royal Dutch Shell, British Petroleum, ConocoPhillips, ExxonMobil.

[22] Source: Second Quarter Press Statements, ChevronTexaco, Royal Dutch Shell, British Petroleum, ConocoPhillips, and ExxonMobil. For ExxonMobil free cash flow is calculated as net income plus depreciation and amortization. ChevronTexaco did not report at this level of detail. Cash flow is set at net income plus depreciation, depletion and amortization.

2008, these five companies generated over $100 billion of cash flow. Less than half of it went into capital expenditures and exploration. The rest was used to pump up stock prices – over a quarter went repurchase of stock, a sixth to dividends. Thus, there is no doubt that the oil companies will profit handsomely from expansion of domestic U.S. output, while it does little to alleviate pressures on and consumer prices makes only a small contribution to solving the nation's energy problem. These windfall profits that are not plowed back into meeting America's energy needs are the focal point in the debate over how to fund energy programs.



CONCLUSION

So while the Administration is busy beating up Congress for not acting to solve the energy crisis – it is the Administration that has dropped the ball on the most important policy option, fuel economy. Congress took the single most important policy step seven months ago when it passed the Energy Independence and Security Act of 2007 and ordered the Administration and its transportation agency (NHTSA) to raise standards for fuel economy of cars and light trucks to the maximum feasible level. Adding the biofuels provisions with the above estimate of maximum feasible fuel economy standards (which were the two policies addressed in EISA) would yield the equivalent of over 850 billion gallons of gasoline in 2010 to 2030. That is over 35 times what the EIA projects will result from expanded drilling. Adding in conservation, which has been belittled in the recent debate and the total rises to almost 1.3 trillion gallons.

In contrast to the EIA projection of no significant impact of drilling on prices as a result of expanded drilling, even at its peak output a decade from now, the reduction in demand and increase in alternatives that took place in the past year has put downward

pressure on prices.[23] Thus, from the short term perspective of lowering prices and the long-term perspective of ending America's oil addiction and reducing our dependence on imported oil, the demand-side and supply-side alternatives are vastly superior.

The election season has clearly misplaced the priorities for energy policy and misplaced the blame for "inaction."

[23] Mark Cooper, *Rising Gasoline Prices: Why Can't Consumers Catch A Break* (Consumer Federation of America, March 2008).