The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

A Compromise on the Drilling Question

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I have given a lot of thought to the issue of opening up new areas for drilling in the Outer Continental Shelf (OCS) and in the Arctic National Wildlife Refuge (ANWR). My position has always been to leave that oil in place for a very rainy day. I wanted to see major conservation efforts in place before we considered tapping that oil. Opening those areas when oil was $20 a barrel would have meant that much of it would have been used frivolously.

Now that oil is over $100 - and in my opinion will be much higher in 5 or 10 years (T. Boone Pickens predicts $300/bbl in 10 years) - we will have tightened our belts a good deal by the time any of this oil could actually reach the market. Therefore, I think now is the time for Congressional hearings on opening up these areas. Let's have an open debate on the issue. However, if these areas are opened for drilling, I have a compromise that should be very attractive to those in opposition.

Hopefully this essay conveys a pragmatic approach designed to bring two sides in this debate closer together. At present it is hard to imagine that they could be further apart. A big part of the reason for the chasm between views is that there is a great deal of misinformation and misunderstanding surrounding the issues. I hope to address those in this essay.

A recent sampling of letters to the New York Times gives a flavor of the views of the opposing sides:

To Drill or Not to Drill? There's the Rub

First a letter opposed to further drilling:

> Allowing offshore drilling for gas as a solution to high fuel costs, as President Bush urges Congress to do, is as sensible as growing more food in response to rising levels of obesity or robbing a bank in response to overspending one's budget.
>
> While it is not popular, the clear answer, as it is in the case of overeating and overspending, is to cut back in the consumption of food, in the consumption of one's salary and in the consumption of fuel.
>
> Painful as it is, I applaud the $4 gallon because it is the one thing that has finally gotten the public to focus on the fact that we need to consume less. For the first time, one hears

> from every quarter, turn off the lights in rooms you are not in, recycle that paper, drive less and take public transportation or ride your bike. That is the kind of talk political leaders should be encouraging, not new ways to keep up the old habits.

And one in favor:

> As a 40-year Alaskan, I can tell you that opening of the Arctic National Wildlife Refuge is the most sensible solution for America's oil problems. Most of the people who are trying to stop drilling in the refuge have never been in our state.
>
> You have no idea how little space they are talking about. Take a regular envelope, pretend that is the refuge ... now where you would put the stamp, that is the area they want to open.
>
> Alyeska Pipeline has worked, the gas pipeline is in the process, and the Arctic National Wildlife Refuge should be. Congress is making this a party fight. How about putting that energy into fighting for all Americans, as oil prices don't care whether you are Republican or Democrat?

So, where does the truth reside? Is it not worth the effort? Or can we "drill here, drill now" and make a significant step toward energy independence? Let's investigate.

What is the Objective?

This is the key to the entire debate. Different groups have different agendas, and desires are often based on misinformation. Take a couple of extreme examples. I consider myself an environmentalist, but one who is practical, and informed on energy issues. Let's take an environmentalist who may be less-informed. Like me, they are concerned about the impact of continued fossil fuel consumption on our environment. When they think of drilling, they envision oil slicks washing up on the shore, and a polluted ANWR. They see oil companies - not ordinary citizens - as the primary beneficiaries if drilling is allowed. They are optimistic about the ability of alternative fuels to rapidly scale up and replace depleting fossil fuel reserves. Or, they don't fully understand the implications of falling fossil fuel reserves, or in an extreme case they don't care and think the earth could use a healthy die-off of the human population.

Each of these groups is going to be vehemently opposed to opening up areas to additional drilling. They simply don't think there is a need, and that it will simply delay our transition to alternatives. Those in Congress who are so outspoken against additional exploration likely fall into the category of 'alternative fuel optimist.' If they can only keep the ban in place, alternatives, mass transit, and conservation will rise to the challenge. The key to this approach is that the alternatives must deliver when they are needed, and they must cover severe shortfalls. What if they don't? What is Plan B? Shortages? Rationing?

For our other extreme example, let's consider the Hummer-driving, non-negotiable lifestyle mentality. The majority of this group is also not very informed on energy. They believe that underneath U.S. territory lies an ocean of oil, waiting to be tapped - if those darned environmentalists would only get out of the way. They are prepared to drill through a polar bear's head if it will mean cheap gasoline - which they know it will. These people are going to be very

outspoken about the need to drill anywhere, anytime. This approach suffers from a very similar problem as the previous approach: What if the oil that is available simply can't cover any severe shortfalls? What if the expectations of these vast oceans of oil lead us to delay actions on alternatives? Again, what is Plan B? Military action?

The majority of us fall somewhere in between, but it breaks pretty sharply along party lines. Democrats don't want to drill, Republicans think we should drill. Perhaps we should first develop an idea of the stakes.

How Much Oil is at Stake?

That's a big problem. We don't know. All we have right now are 'educated' guesses. Multiple government agencies have made assessments. The Minerals Management Service in the Department of the Interior estimated in 2006:

> The MMS estimates that the quantity of undiscovered technically recoverable resources ranges from 66.6 to 115.3 billion barrels of oil and 326.4 to 565.9 trillion cubic feet of natural gas. The mean or average estimate is 85.9 billion barrels of oil and 419.9 trillion cubic feet of natural gas.

Of that, they estimate that reserves in areas currently off-limits to exploration amount to just under 18 billion barrels. Based on the 2007 U.S. consumption rate of 20.7 million barrels of oil per day, 18 billion barrels would last just under 2.5 years.

The EIA estimate from areas currently off-limits to exploration was very similar at just over 18 billion barrels:

Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf

Table 10. Technically recoverable undiscovered oil and natural gas resources in the lower 48 Outer Continental Shelf as of January 1, 2003

OCS areas	Crude oil (billion barrels)	Natural gas (trillion cubic feet)
Available for leasing and development		
Eastern Gulf of Mexico	*2.27*	*10.14*
Central Gulf of Mexico	*22.67*	*113.61*
Western Gulf of Mexico	*15.98*	*86.62*
Total available	***40.92***	***210.37***
Unavailable for leasing and development		
Washington-Oregon	*0.40*	*2.28*
Northern California	*2.08*	*3.58*
Central California	*2.31*	*2.41*
Southern California	*5.58*	*9.75*
Eastern Gulf of Mexico	*3.98*	*22.16*
Atlantic	*3.82*	*36.99*
Total unavailable	***18.17***	***77.17***
Total Lower 48 OCS	***59.09***	***287.54***

This graphic was recently used in a post at Grist by Joseph Romm, who argued that the amount of oil that is off limits has been greatly exaggerated. Based on the above graphic, Romm has a point, as the amount of undiscovered oil in areas open to exploration is more than twice the estimate from areas off limits to exploration. However, much of that oil is mile-deep water that will be very expensive to develop. So the comparison isn't necessarily apples to apples.

Estimates of recoverable oil from ANWR are of a similar magnitude. The Energy Information Administration (EIA) in a 2008 report noted:

> In the mean oil resource case, the total volume of technically recoverable crude oil projected to be found within the coastal plain area is 10.4 billion barrels, compared to 5.7 billion barrels for the 95-percent probability estimate, and 16.0 billion barrels for the 5-percent probability estimate.

The EIA also presumes that it will take 10 years to scale up and bring production online:

> At the present time, there has been no crude oil production in the ANWR coastal plain region. This analysis assumes that enactment of the legislation in 2008 would result in first production from the ANWR area in 10 years, i.e., 2018.
>
> The primary constraints to a rapid development of ANWR oil resources are the limited weather “windows” for collecting seismic data and drilling wells (a 3-to-4 month winter window) and for ocean barging of heavy infrastructure equipment to the well site (a 2-to-3 month summer window).

The timeline broke down as 2 to 3 years to obtain leases, 2 to 3 years to drill an exploratory well, 1 to 2 years to develop a production development plan, and 3 to 4 years to build infrastructure.

What's the bottom line? With an estimated 18 billion barrels of oil offshore and 10 billion barrels in ANWR, there is potentially enough oil there to meet four years of U.S. demand. However, in terms of imports, currently around 13 million barrels a day, there is potentially enough there to eliminate oil imports for nearly 6 years. Further, based on my proposal below, there may be enough there to eliminate imports for 20 years.

Finally, consider the economic ramifications. If we do nothing, despite well-intentioned calls for conservation, our insatiable demand for oil imports will continue. With production from some of our major suppliers having peaked (e.g., Mexico) and with internal consumption in other countries negatively affecting their exports, the price of oil will be under constant upward pressure over the long term. If we don't produce those 28 billion barrels of oil, we will go and buy those barrels on the open market. At today's oil price, that means that about $3.5 trillion will leave this country, much of it flowing into countries that are hostile to the U.S. By keeping that money at home, we can not only create jobs, but we have an opportunity here to fund a transition away from oil, and to more sustainable options.

Let's Compromise

Both sides generally agree that our dependence on petroleum is a problem. Among the arguments

from both sides is that this dependence puts our national security at risk and that it endangers the environment. I think both sides would agree that a long-term solution to the problem could be a combination of conservation, along with alternative options such as higher efficiency vehicles, electric transport, and mass transit. Where large numbers will start to disagree is whether this is achievable in the short-term, or whether it is going to take a few more years and a few more technological developments.

I fall into the latter category, for a variety of reasons. I am pretty familiar with a lot of the alternatives, and they are simply not competitive even at gasoline prices of >$4/gallon. To illustrate that point, consider Europe, where gasoline prices in many locations are now approaching $10/gallon. Even at that price, fossil fuels remain the dominant choice for transportation. It is going to take more than price - or at a minimum much higher prices than Americans probably anticipate - to drive us away from a very high level of dependence upon fossil fuels.

So how about a compromise? I propose that we open up some of the more promising areas to exploration, and then devote the royalties to funding fossil fuel alternatives. We could subsidize public transportation. We could provide a tax credit of $1,000 for each person who purchases a car that gets over 40 mpg. We could borrow a page from T. Boone Pickens' plan, use these oil revenues to fund wind and solar power, and displace natural gas which could then be used to displace petroleum.

It is true that the oil won't flow from these areas for perhaps a decade, but by then we are likely to be in very bad need of it. Prices will probably be very high, which means the royalties from the oil will provide a lot of money for funding alternatives. This should be a compromise that parties from both sides could agree to. If not, then what's going to happen is that as prices continue to rise, so will the pressure to drill, and Congress will eventually cave in to these demands. But by failing to earmark the money for alternatives, it will just postpone the inevitable. So now is an opportune time to hold open Congressional hearings on the subject.

That's a compromise I prefer. However, one that would have even greater support behind it would be to return an oil dividend to U.S. citizens (as Alaska has historically done). That is tangible for people, whereas funding the alternatives may not be. However, while I think this compromise would find wide support among many people with stretched budgets, it does nothing to address the problem of oil dependence. That, in my opinion, must be part of any solution.

A final excerpt from those New York Times letters summed it up best, in my opinion:

> People say we should have a Manhattan Project-style program to develop alternative energy. That is fine, but while the Manhattan Project was continuing, we did not put World War II on hold while we waited for the atom bomb. The conventional war was continually fought throughout that time.

Conclusion

As I recently calculated, we could displace a great deal of our fossil fuel consumption with solar power, but it will ultimately take a multi-trillion dollar investment. We could borrow from T. Boone Pickens' plan and use wind and solar power to displace natural gas that is currently used to produce electricity. That natural gas could then be used in CNG vehicles to displace petroleum.

The net impact would be a large reduction in our fossil fuel consumption (and note that it is much easier to produce natural gas from biomass than it is to produce liquid fuels).

We sit on top of trillions of dollars of oil. We should use it – sparingly – to wean ourselves from oil dependence. The realistic alternative to this is that we continue to be highly dependent upon petroleum. As a result, we will watch those dollars flow out of the U.S. - right up until the point that our imports dry up and we watch a new generation of sons and daughters march off to fight resource wars because of our failure to plan ahead.

Additional Reading

The US Offshore Drilling Argument: The Debate Between "Starting Now" and "Waiting a While" by Gail the Actuary

An Example of a Competitive Lease Sale Notice from the Bureau of Land Management

U.S. federal oil and gas royalties from Congresspedia