The Oil Drum
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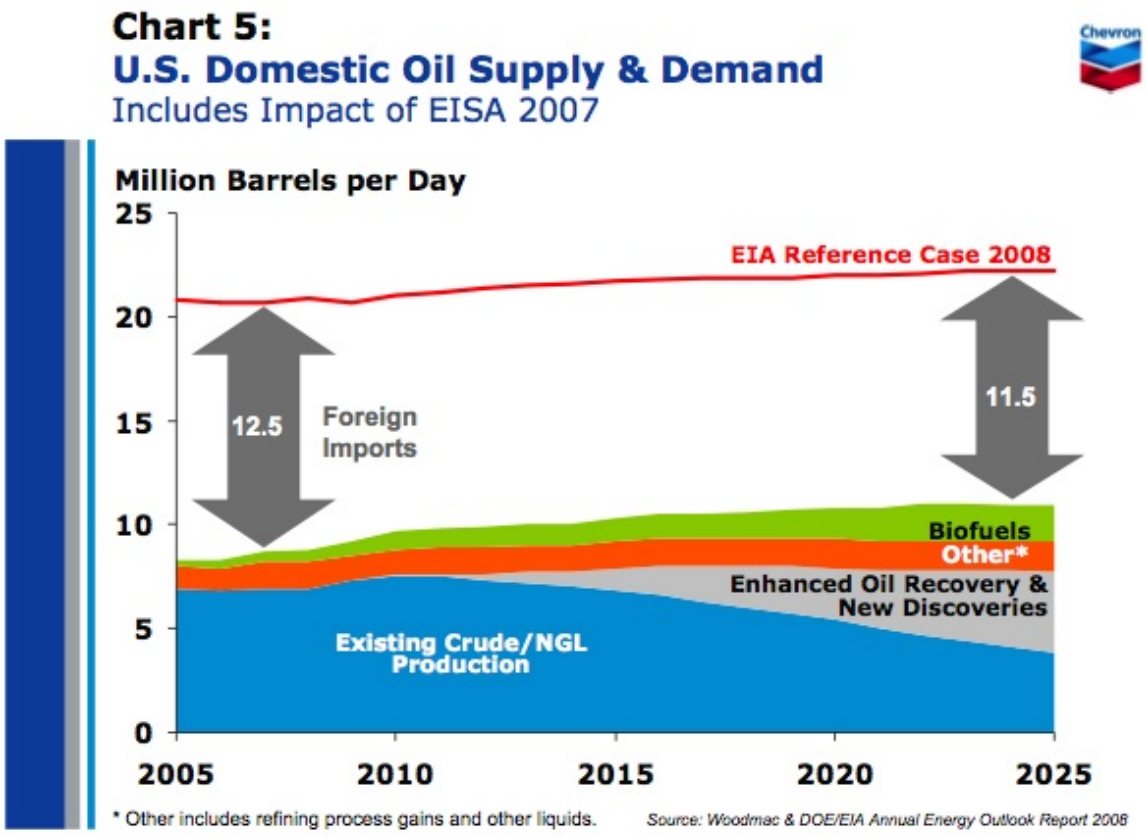
How Realistic is EIA's US Domestic Oil Supply and Demand Forecast?

Posted by Gail the Actuary on April 7, 2008 - 10:05am
Topic: Alternative energy
Tags: american petroleum institute, blogger call, eia forecast, peter robertson [list all tags]

I was invited to a blogger's conference call on April 1, hosted by the American Petroleum Institute (API). We were told that each blogger would be allowed to ask one question of Peter Robertson, Vice Chairman of the Board of Directors of Chevron Corporation. The material we were provided in advance was the written statement of Mr. Robertson, prepared for the House Select Committee on Energy Independence and Global Warming. It included a number of charts, including this one:



My question was, "How realistic is EIA's Chart 5 scenario? If you look at Chart 5, it looks like there is no need to conserve."

This was the discussion:

> 03:35 MS. TVERBERG: I was looking at the charts that you sent out earlier today with various projections of things. If you look at Chart 5: U.S. Domestic Oil Supply and Demand, if you look at it, it basically says that including imports, the total amount of oil available will continue to go up through 2025, and that the amount that the U.S. will produce including enhanced oil recovery and new discoveries will go up. I mean, this pretty much gives the view that you don't need to conserve because there's plenty of oil that's going to be available. How realistic do you think this scenario that the EIA has put together is?
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> 04:21 MR. ROBERTSON: Well, I mean, you know, of course this doesn't – this is the U.S. So –
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> MS. TVERBERG: Well, this is the U.S., right.
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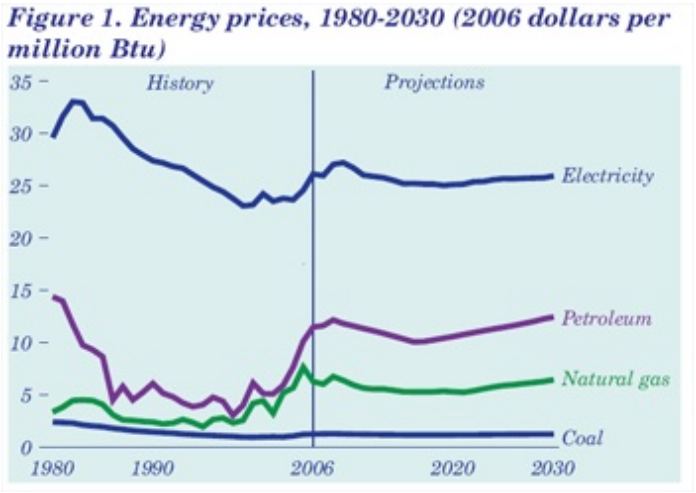
> 04:28 MR. ROBERTSON: This is the U.S. so this says that we're going to have to import, you know, about the same amount of oil, according to this case and the next 20 years, and the real problem is, you know, is that available to be imported? I mean, everybody else in the world is obviously competing for that 11.5 million barrels as well. So you know, what is going to happen to prices during this period and how tight is the rest of the world going to be?
>
> So I mean, I think the point of this chart was really to make a point about U.S. We need – there are existing crude and – this is oil now, this is not gas, so this is just what's going to be needed – oil, this is really almost a transportation fuel chart because the main thing that oil is used for –, not the only thing, but the main thing it's used for is transportation fuels. And so far, we have difficulty substituting something for transportation fuels.
>
> So this is sort of an oil chart, but what it says is that look how important our existing oil production is in the United States and look how it declines unless we do additional exploration and we get some new technology and we, you know, we get some areas where we can explore and all of these things, because the biofuels – and the biofuels part of this chart is what – you know, is the – what happened in the energy bill last year, so that's – and you can see the impact of that. It's still – it's important, but it's still not going to change the position.
>
> 05:50 So even after all this, even if we do – if we're able to keep the existing crude production flat – which we haven't done for many, many, many years – you know, as you guys know where it was nine million barrels a day about 20 years ago, now we're about five million barrels a day in the U.S. You know, and that – that sort of trend line is besides a blip here, probably from the Gulf of Mexico. You know, the trend line has sort of been down for a long time. So we're going to have hard work just keeping this flat. It says that, you know, we're still going to have to import a lot of oil, and that's the problem. And the opportunity is to shrink that amount of oil that we import, because we are going to be competing with the rest of the world for it, and who knows what the price of it will be.

John Felmy, API's Chief Economist, then pointed out what is easy to miss. EIA's top line is really an estimate of demand. Demand is estimated based on an economic model that includes the desired level of economic growth together with a growth in efficiency equal to what it has been in the past -- about 1.6% per year, plus the expected impact of the new fuel economy requirements from the 2007 legislation. Thus, Chart 5 does have some efficiency growth built into it, but even including the efficiency gains, it is indicating an increase in expected oil consumption.

EIA determines expected imports by subtracting its estimate of the amount of oil the US will produce from its estimate of future demand. This produces the 11.5 million barrels a day of oil imports it shows as expected for 2025. The EIA makes the assumption that someone, somewhere, will have oil available to export, when it is needed.

I never really got an answer regarding how realistic Mr. Robertson thought this scenario was. Clearly he thought the forecast for US oil production was a stretch, and import costs would be high. Mr. Robertson's prepared charts did not include EIA's estimates of the future cost of oil, but the EIA 2008 Energy Outlook Report shows them to be as follows:



It sounded like neither Mr. Robertson nor Mr. Felmy had much confidence in these cost estimates.

Conference Call Information

There were a total of six bloggers on the conference call:

Margot Gerritsen - Smart Energy
Dave Schuler - Outside the Beltway
Geoff Styles - Energy Outlook
Gail Tverberg - The Oil Drum
Brian Westenhaus - New Energy and Fuel
Carter Wood - Shopfloor.org

In additional there as Peter Robertson, from Chevron; John Felmy, chief economist at API, and Jane Van Ryan, host from API. Ms. Ryan has tried recently inviting more liberal bloggers, but has not succeeded in getting any to participate.

The transcript of the call can be found here. The audio version of the call can be found here.

Other Questions

Carter Wood said that the low dollar had been a boon to companies doing exports, and wondered what Chevon's position was on the level of the dollar. Mr. Robertson said that Chevron wanted the dollar higher, so that oil wouldn't be so expensive for customers.

Geoff Styles wondered if there were any areas of agreement, where the industry and government might work together. Mr. Robertson indicated improved energy efficiency was one such area. Another was allowing more drilling in restricted areas. A third was raising people's view of the industry so that they view it as an important industry, doing high tech things, so that young people will be attracted to studying to be geologists and engineers.

Margot Gerritsen commented on the current lack of funding by the Department of Energy on oil and gas projects of all kinds, such as enhanced oil recovery and research on improved methods for unconventional gas and oil recovery. Mr. Robertson said that the industry was paying a lot of money in royalties and fees, and that at least a little of that is set aside for research under the recent energy bill. Ms.Gerritsen observed that fashions in funding change, and now the money is going to carbon sequestration and renewable fuels.

Brain Westenhaus asked about how decisions were made for allocating capital among the various different choices, such as renewables, enhanced oil recovery and new drilling. Mr. Robertson said that they evaluate and are involved with a lot of different projects. Historically, oil has had the best return for stockholders. Renewables are mostly not too far along, are expensive for the purchaser, and hard to scale up. It is often difficult to get permitting for oil and gas processing facilities in the United States. This can force the company to build facilities overseas instead.

Changing the Conventional Wisdom

In Mr. Robetson's prepared statement, he closes with a section he calls "Changing the Conventional Wisdom", in which he lays out what action steps he thinks are necessary. This is a shortened version of those steps.

> First, we need to value energy as a precious resource. Energy efficiency is the most immediate and important action that each of us can take to contribute to rising energy prices. The United States must become a nation of energy savers.

> Second, I would urge you to be sensitive to the issue of scale and timeframe. I hope that I have been able to demonstrate Chevron’s commitment to the development of alternative sources of energy. This is an ambitious undertaking and one that we are embracing. But the scale of the energy system means that despite our combined efforts, renewables will meet less than 10 percent of demand in 2030, according to EIA estimates. We must continue to bring traditional energy supplies to market, even as we are developing alternatives sources of energy.

> Third, on the supply side, we need your help to open up the 85 percent of the Outer Continental Shelf that is now off limits to environmentally responsible oil and gas exploration and development. We cannot expect other countries to expand their

> resource development to meet America's needs when our government limits development at home.

> Finally, I would encourage careful evaluation of policies that can lead to unintended consequences and create inefficiencies in the gasoline supply system. Today we have 17 "boutique" fuel requirements across the country, requiring us to blend unique gasoline products for different states and different localities. More requirements on fuels are being added through renewable fuel mandates and proposed climate policies.

Comments

Whether or not Mr. Robertson and Chevron believe in peak oil, I think Mr. Robertson approaches are reasonable ones. I don't think that anyone would disagree with energy efficiency. It is hard to see how alternative fuels will scale up in a short time frame, and nearly everyone can agree that having a having too many fuel types is a problem.

I personally think that drilling at home is a far better solution than pointing fingers at someone overseas, and accusing them of not pumping as much oil as they are able to. I think blaming the National Oil Companies is all too easy a solution, and I am glad Chevron did not take this route.

I know many people are opposed to opening up the outer continental shelf to drilling. With the long lead times involved, it will take many years - quite possibly ten - before any oil can be produced, and many years after that before all of the oil is removed. As a comparison, it become economically attractive to drill in the North Sea in the mid-1970s, and we are still producing oil and gas there now.

I know a lot of people think we should save this oil and gas for future generations, but it seems to me that producing this oil very much depends on having the required infrastructure in place - things like roads, pipelines, the electrical grid, trained engineers, and companies set up to handle all of the logistics involved. It seems to me that if we wait too long, we may never be able to produce this oil and natural gas. I doubt that the quantity makes a difference from a climate change point of view.

If we wait too long, the quantities of oil and gas in pipelines will drop below the minimum operating level, or pipelines will fall into disrepair, so they cannot be used. Road surfaces may not be adequately maintained to bring necessary equipment to desired locations. Equipment such as helicopters needed for production may no longer by available. Trained personnel may be hard to find. We need to be planning thirty or more years ahead, and things can change a lot in that time.