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ASPO USA PEAK OIL REVIEW

Association for the Study of Peak Oil & Gas USA

July 29, 2013

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1. Oil and the Global Economy

Oil prices dropped last week for the first time in more than a month. After having increased by $14 a barrel in the previous 30 days, NY futures were down by $4 a barrel last week closing at $104.70. In London, oil which had risen only $8 a barrel in the previous month was down about a dollar closing at $107.17. Much of the impetus for the decline was profit-taking after the three-week rise, but concerns about Chinese economic growth continue to rise as additional adverse economic reports on Beijing's economy come in. The WTI/Brent price spread widened to $2.47 after having traded at parity early last week. Conventional wisdom at the minute is that oil prices are too high for the fundamentals and that unless there is a significant downturn in the Middle Eastern situation, prices will drift lower for a while.

US crude stocks were down by 2.7 million barrels the week before last as US refiners continued to crank out an unusual quantity of distillates for a strong export market.

The general outlook for the global economy is not good. The *Wall Street Journal* concluded that the "long-anticipated acceleration in the US economy has been put on hold once again" as retail sales and corporate profits have been disappointing. China may be in more trouble than most think with real economic growth falling well below the numbers that Beijing continues to report. Europe struggles along with the occasional bright spot, but no real recovery, and some analysts are worried about growth in non-OECD countries that are not oil exporters.

US natural gas futures closed at a four-month low last week as weather forecasters called for "average"weather in the next few weeks.

A congressional hearing on whether investment banks are using their ownership of raw materials to manipulate the commodities market is causing quite a stir. Changes in the commodities markets may be in store. JPMorgan said last week they may spin off their physical commodities business and some believe that banks are moving to get ahead of what could be a new wave of commodities regulation. This could lead to less liquidity in the commodity markets in the months ahead.

US gasoline futures fell about seven cents a gallon last week, but are still 35 cents a gallon higher than at the beginning of the month.

2. The Middle East & North Africa

Iran: There were mixed signals on the nuclear standoff coming out of Tehran last week. In Baghdad, Prime Minister al-Maliki, acting as an intermediary for fellow Shiites in Iran, told Washington that Iran's incoming President is serious about direct talks with Washington over the nuclear issue. Iran's "Supreme Leader"

Ayatollah Khamenei, however, said he is not optimistic that talks with the US would lead to an agreement. The US House of Representatives is planning to vote on a bill aimed at cutting Iran's ability to export oil. The bill, which is expected to pass the Senate too, would direct the President to take measures to halt Tehran's oil exports completely by eliminating exemptions from harsh US sanctions for those countries still buying Iran's oil.

There is a general feeling of optimism in the West, however, that Iran's new President, Hassan Rouhani, has enough clout with the Ayatollah to push through concessions necessary for a nuclear deal, despite the nearly unanimous opposition of hardliners in Tehran.

Tehran and Baghdad signed a $14.8 billion agreement to use Iranian natural gas to fuel Iraqi power stations. A combination of strenuous US objections to the deal and the irresistible target the new pipeline will make for Sunni/al-Qaeda bombers make it unlikely that the project will be successful.

Iraq: It was another bad week in Baghdad. The Associated Press body count says that more than 550 Iraqis have been killed in violent attacks this month. The death toll for the last three months has been the highest in five years, surpassed only by the days when Sunni and Shiite militia battled each other and 175,000 US troops. The freeing of hundreds of hardened al-Qaeda terrorists during assaults on two Iraqi prisons last week does not bode well for the future.

While the violence has as yet had only a minor impact on Iraqi oil exports, the time is not far away when the impact will be substantial. The northern export pipeline to Turkey is a prime target for Sunni insurgents bent on denying the government export revenues and has been attacked frequently. There have been so many repairs to bomb damage along the pipeline that its carrying capacity has been reduced; and some are wondering how long it can go without a major overhaul. Insurgent attacks have started to spread into southern Iraq where most of the oil infrastructure is located. So far there has not been a serious effort to drive out foreign oil workers that are rehabilitating Iraq's oil industry, but this cannot be far away if current trends continue.

Egypt: The situation went from bad to worse over the weekend when the Army used force to suppress pro-Morsi demonstrators in several locations across Cairo. Scores were killed and the wounded may total 1,000 or more. Further exacerbating the situation was the report that former President Morsi was being moved to a prison and was being charged with collaboration with Hamas and other crimes by the new government.

Multi-billion dollar gifts and other subsides from the Gulf Arab states have stabilized the economic situation for the minute. However, the new government is showing no inclination to reduce the $150 billion program of grants, subsidies and social programs that support many of the country's 85 million people.

The political troubles are starting to interfere with oil and gas production. The British energy company BG Group is pulling some of its staff out of Egypt. Offshore operations have not been affected, but LNG exports have declined. Although the domestic energy supply is under control at the minute thanks to the generosity of the Gulf Arabs, the wheat situation remains unclear. Given that Arab money is flowing in, Cairo should be able to import enough wheat to get through the rest of the year unless the uprising leads to a major societal breakdown.

Syria: The country is slowly evolving into three states; the Assad regime is consolidating its hold on the west and coastal areas; the rebels are consolidating the area around Aleppo and down the Euphrates valley; and the Kurds are talking about forming an independent state in the northwest. There is talk of al-Qaeda forming a religious state within the rebel controlled territory. For the time being, Syria as we knew it has ceased to exist.

The situation seems to be in a stalemate with the rebels unable to overcome the Hezbollah-reinforced government forces and the government unable to move into the rebel held territory in the north and east. The EU seems ready to declare the military wing of Hezbollah a terrorist group which would harm its efforts to

raise money in Europe, seize whatever assets are located there, and restrict travel of Hezbollah military officials. The blurry line between political and military Hezbollah, however, will make these sanctions difficult to impose.

Were it not for the growing refugee and food crises, Syria could slip from world attention as troubles grow in other countries. The country's oil exports are all but gone and it is living on handouts from Russia and Iran. For the immediate future, Syria seems more important for the impact its insurrection will have on Jordan, Lebanon, and Iraq or possibly its role as a factor in nuclear negotiations with Iran.

Elsewhere in the region: There were number of developments last week that could eventually impact oil exports. In Libya, protestors attacked the offices of the Muslim Brotherhood and the headquarters of a liberal coalition after the assassination of a prominent political activist and opponent of the Brotherhood. The Brotherhood holds the second largest number of seats in the legislature and there is growing opposition to its increasing influence. During the attack, more than 1,100 detainees escaped from a prison near Benghazi. Most were being held on serious charges and their escape will only add to the precarious situation in the country. The pro-military demonstrations in Benghazi and Tripoli seem to be related to the anti-Brotherhood demonstrations in Cairo.

Kuwait held parliamentary elections on Saturday, the third such election in 17 months. This election was ordered by the court after in found flaws in the December election. Although the Kuwaiti parliament probably has more real power than any elected body in the Gulf Arab states, the Al Sabah family and the 84-year-old Emir still controls all key government offices and policies. This election comes amidst street demonstrations and government crackdowns on the social media. Nobody is expecting upheavals such as those in Egypt or Syria, but the country is a large oil exporter and the situation needs to be watched.

In Bahrain, three policemen were wounded in bomb blasts after demonstrations by militant Shiite factions against the Sunni-ruled Island. The bombings are a reminder that the 30 month old uprising on the island continues.

South Sudan has cut back its oil exports through Sudan to 97,000 b/d from 200,000 the week before last amid recriminations. South Sudan is threatening a total halt to exports.

3. China

The major development of the week was the announcement that China's manufacturing sector contracted in July at the quickest pace since last summer. The new data emphasizes the stresses on China's economy as it tries to move away from an economy based on exports and investment in infrastructure to one based on domestic consumption. Complicating the problem is the toll that rapid economic growth is taking on the environment and health. If emissions are to contract by 30 percent in the next four years, which is the current plan, we are obviously going to see an adverse impact on economic growth for increases in green energy or energy efficiency so quickly is improbable.

New Chinese figures on oil domestic production show it increasing by 172,000 b/d in the first half of the year to 4.18 million b/d. This is a substantial jump from the 62,000 b/d increase at the end of June. Outside observers are becoming increasingly skeptical of official Chinese economic numbers as economic growth slows and environmental problems increase. The speed with which China reports many economic growth statistics, often only a few days after the end of a reporting period, is something no other country has been able to do.

4. Quote of the Week

- "In the space of less than two years the amount of oil being shipped by rail in Canada nearly tripled to almost 300,000 barrels a day. Without new pipeline capacity, the amount would surely go even higher. [S]hipping oil by rail is far more environmentally challenging than moving it through a pipeline. The

environmental movement definitely didn't want oil to be diverted from pipelines to rail, of this I'm sure. But the Keystone [XL pipeline] saga is riddled with unintended consequences."

-- Jeff Rubin, oil economist and author

5. The Briefs (clips from recent Peak Oil News dailies are indicated by date and item #)

- This year, more **trains carrying crude** will chug across North America than ever before - nearly 1,400 carloads a day. In 2009, there were just 31 carloads a day. (7/23 #23)
- A series of **surface oil leaks** at Canadian Natural Resources Ltd.'s oil sands operation has called into question the safety of bitumen extracting methods. Canada's largest independent oil producer CNRL has not been able to stop the leaks in northeastern Alberta, the first of which was reported May 20. At issue is an in situ production process called high pressure cyclic steam stimulation, a procedure used in oil recovery for over 30 years. (7/27 #24)
- **India's** crude oil production in June fell marginally from a year earlier and natural gas output continued its declining trend. Crude oil output fell 0.6 percent to 762,320 barrels a day. (7/25 #14)
- High utilization of the **offshore rig fleet** is driving day-rate costs to historical highs as strong demand calls for new, deeper-water vessels to be built to the latest specifications. These can cost more than $500 million each, but a recent deal offshore Africa shows Total is paying almost $700,000 a day to hire a new ultra-deepwater drill ship. The expected demand from Brazil could push these rates higher still. (7/25 #4)
- **Off Israel's shores,** Noble Energy, the Texas company that discovered rich natural gas fields off Israel and Cyprus in the eastern Mediterranean, is getting ready to start deep-water exploration for as much as 1.8 billion barrels of oil in Israeli waters. (7/25 #10)
- **Israel's navy** is trying to figure out how best to protect the Jewish state's expanding gas industry-- and if current plans work out, oil production as well -- from a wide spectrum of security threats that seem to be growing by the day amid the violence convulsing the Middle East. (7/27 #10)
- In **Mexico**, Pemex has run up yet another large quarterly loss. The state-owned oil giant saw its revenues shrink further due to a stronger home currency against the US dollar plus fewer exports as domestic demand increased. (7/27 #16)
- **Falkland Islands** explorer Argos Resources revised upwards its estimate of the resource potential in its exploration license following new seismic work. The company said 52 mapped exploration prospects and leads in its block are seen holding total un-risked potential of 3.08 billion barrels of prospective recoverable resources, up from 2.11 bb. (7/26 #13)
- Last Friday a Pennsylvania Democrat introduced in the US House of Representatives a bill aimed at eliminating a more-than-30-year-old federal loophole he claims has allowed oil and natural gas companies to avoid **hazardous waste disposal standards**. (7/27 #21)
- **Oil and gas rigs** in the US increased by six to 1,776 this week, according to Baker Hughes. The advance was the fourth in a row. Oil rigs rose six to 1,401 while gas rigs were unchanged at 369. The total U.S. count reached the highest level since March 15. (7/27 #23)
- A combination of oil and gas innovations and well-site cost cuts is rendering **the vaunted US rig count** a less important oilfield indicator than the number of holes in the ground. In keeping with the times, oilfield services company Baker Hughes is complementing the rig count it has tallied for more than 70 years with a new metric: US well counts. (7/24 #4)

- **The US Dept. of Energy** said Thursday that the world will use far more of every type of energy in coming decades. Their report predicts that China and India will drive growing consumption and that world-wide use of energy—mostly for transportation and electricity—will surge 56% by 2040 compared with 2010 levels. (7/26 #5) *[NOTE: it seems there will be no supply constraints.]*
- **Japan's** demand for imported natural **gas**, which ballooned after the 2011 Fukushima Daiichi nuclear disaster, is falling and may deflate a lot further if the government succeeds in getting dozens of idled nuclear reactors restarted. (7/24 #17)
- **Walter Oil Corp. lost control of a natural gas well** off the coast of Louisiana. A natural gas plume ignited Tuesday evening and, by Wednesday, part of the rig owned by Hercules Offshore had collapsed. By Thursday the failed well had "bridged over" or sealed itself with sand and sediment. By evening it was just a small flame. (7/27 #20)
- A landmark **federal study on hydraulic fracturing**, or fracking, shows no evidence that chemicals from the natural gas drilling process moved up to contaminate drinking water aquifers at a western Pennsylvania drilling site, according to the US DOE. (7/23 #24)
- Makers of some **renewable fuels** are asking the federal government to ease quotas for use of their products in a bid to head off a congressional overhaul of a program that refiners say is driving up costs at the pump. The concern: production of fuels made from sources such as wood waste, algae or used cooking oils are a fraction of what was envisioned in a 2007 law. (7/26 #14)
- **Maryland** will boost its renewable energy portfolio standard, strengthen its programs to further reduce energy usage and require power plants to reduce their emissions by 40 percent, Governor O'Malley said Thursday. O'Malley believes the state is likely to fall short of its target to reduce greenhouse gas emissions 20 percent by 2020 and therefore he was releasing a plan to get the program back on track. (7/26 #15)
- The US Department of Justice has started an **antitrust investigation** of the pressure-pumping business, a key part of the oil and gas industry practice of hydraulic fracturing. (7/25 #18)
- **In the Kurdish region of northern Iraq,** oil flowed from a well at a rate of 25,000 b/d, a site record for energy company DNO International. A Tawke well tested previously at a rate of 8,000 b/d. (7/24 #8)
- The Energy Information Administration said **OPEC nations** excluding Iran earned nearly $982 billion in net oil export revenues last year. That's a 5 percent increase from 2011. (7/24 #12)
- **The US rail industry**, in the wake of the deadly oil-train derailment in Quebec this month, is grappling with a safety problem regulators have warned about for years: tank cars that rupture during accidents. (7/24 #21)
- **The oil-production boom** is delivering prosperity to pockets of the US, but in West Texas, the epicenter of activity, it is also bringing trouble in the form of surging electricity prices. Many municipalities and businesses are bracing for big surcharges this year, after having been hit hard last summer, as energy use by oil drilling and production equipment outpaces the capacity of the region's power grid. (7/24 #22)
- The potential for misunderstanding **shale resource estimates** is great. Various organizations have published resource estimates for shale gas plays in the US and around the world. These reports are commonly misinterpreted as representing commercially producible volumes of gas. (7/24 #24)
- **West African pirates** will threaten the region's oil and shipping industries for years as the measures used to curb attacks in the Indian Ocean aren't able to help, according to a provider of armed guards for vessels. (7/23 #16)

- **Oil and gas companies** in the US would face at least $345 million a year in extra costs if rules on hydraulic fracturing on public lands as proposed by the Obama administration are finalized, industry groups said on Monday. (7/23 #22)
- **Chinese** authorities said they raised the price of gasoline by more than 3 percent because of high crude oil prices on the international market. The National Development and Reform Commission, which sets energy prices, said gasoline prices are on the rise in response to oil prices. (7/22 #15)
- Forbes recently issued a commentary on **the closing of The Oil Drum** which deserves some rebuttal since, as with many stories on the "Peak Oil" topic, it conveys too many incorrect statements and false assumptions.
- About half of **China's rivers** have dried up since 1990 and those that remain are mostly contaminated. Severe water pollution affects 75 percent of China's rivers and lakes and 28 percent are unsuitable even for agricultural use. Without enough water, coal can't be mined, new power stations can't run and the economy can't grow. At least 80 percent of the nation's coal comes from regions where the United Nations says water supplies are either "stressed" or in "absolute scarcity." (7/27 #17)
- **Foreign nuclear experts** harshly criticized the operator of the devastated nuclear power plant at Fukushima on Friday for its delay in disclosing that highly contaminated groundwater has been leaking from the site into the ocean. (7/27 #8)
- **In Tunisia,** the government on Friday blamed an Islamist extremist cell linked to Al Qaeda for the killing of a leader of the political opposition and identified the chief suspect as the person who also killed an opposition figure in February. (7/27 #14)
- **Saudi Arabia** is seeking about $109 billion of investment for a solar industry that will generate a third of its electricity by 2032. (7/23 #12)
- **China banned the construction** of government buildings for the next five years, the latest in a series of initiatives to discourage corruption and foster frugality. (7/24 #16)
- **350.org** is asking colleges, cities and churches to divest their financial holdings from a group of 200 companies that produce coal, oil or natural gas. So far six schools, 16 cities and 11 religious institutions have agreed to divest from those companies. (7/27 #22)

6. **Commentary: Interview with Martin Payne—Is Peak Oil Dead?**

By Steve Andrews

Q: The industry deserves major kudos for the largest year-over-year increase in US oil production during 2012. What's your sense for how long that type of gain might continue?

A: Both the Bakken and Eagle Ford are wonderful and economic shale oil plays. It doesn't mean they don't have uneconomic wells that may be drilled on their peripheries or in areas that aren't sweet spots. But the rate of production increases in the Bakken has already slowed somewhat. And the exploration and development efforts look like they're slowing a little bit, as well. The Permian is the third major shale oil play, but it's more of a margin play in many cases.

Meanwhile over the last two years oil production from the Eagle Ford increased by 600,000 barrels a day while roughly half of that was eaten up by declines in the Gulf of Mexico. So it's a forest and trees situation where you have to look at both. Former CEO of EOG Mark Papa said those three plays are likely it for the US, in terms of major black oil plays. So we've got to keep things in perspective. In terms of the forest and the trees,

the Bakken and Eagle Ford are trees; they're big trees, but they're not the forest. The forest is the world oil supply situation; on a world-wide basis, how do the trees scale in to everything else in the world?

Q: Yet for the most part the discussion at the national level makes little or no note of that slowdown. It's all about covering the boom. And don't we all hear that the boom is just going to keep growing?

It's hard *not* to get caught up in the boom. In Houston and Midland and South Texas and North Dakota, the boom is real, people are doing well, and it's floating a lot of boats. But you have to go back and look at the big picture, look at the scale of these plays. These are "trees" — blessings in a way — and they give us a temporary reprieve from what Bob Hirsch called the severe consequences of not taking enough action proactively with respect to peak oil. The question is will these plays "fix" peak oil? The answer is no.

Q: So, in your opinion, M. King Hubbert more or less had it right, at least in the big picture, not down at the granular level?

A: Some have mentioned that, "well Hubbert….back in the 1950s and 1960s he didn't have access to the concept of unconventional oil or shale oil plays. He did good work, but it was only applicable to the conventional oil he knew about." I would propose that it doesn't really matter and that in hindsight, after a couple of more years, it will be more evident that effectively he did take unconventional oil into account because the unconventional oils are not easy oils.

Conventional oil--which was found in huge quantities, in giant fields in the 40's and 50's - well those giant fields had huge reserves *and* high porosities and permeabilities - meaning they would flow at very high rates for decades. This is in contrast to a relative few shale oil plays which have very low porosity and perm and which must be hydraulically fractured to flow. Conventional oil is just a different animal than unconventional oil; some unconventional oil wells have high initial rates of production, but all of these wells have high decline rates. Yet it's essential that we produce this oil. Without unconventional oil, what we wind up with is essentially Hubbert's cliff instead of a Hubbert's rounded peak.

I think Hubbert anticipated a lot of incremental efforts by the industry to make the right-hand or decline side of his curve a more gradual curve rather than a sharp drop. He was thinking about secondary recovery, though perhaps it was too early for him to think about tertiary recovery, but those are the types of incremental efforts that he would have anticipated. Likewise, I would say that unconventional oil is another incremental type of recovery, at least compared to conventional oil.

Q: So the peak oil problem isn't dead yet, as has been shouted in a few headlines?

A: Our bottom-line problem here is that if we ignore peak oil as a result of these plays, we ignore it at our peril. This is no time for complacency.

Peak oil is still a looming transportation problem—a huge one. I would suggest that we've made some progress…some things have been done. We've made several years worth of efforts collectively, whether it is more movement towards electric cars, mass transit, scaling down our vehicle purchases, or driving less due to price signals. But we've only just begun and we have a long ways to go in order to deal with the still-looming Hubbert's peak, in order to not deal with the severe consequences that Bob Hirsch wrote about in his 2005 research for DOE.

The big problem is that it's hard to be proactive when there's no current crisis. We're a country of optimists. That's helped us do what we do, including the development of new technologies to create, innovate and develop better than anyone else in the world. I think it's imperative to maintain a positive outlook. At the same time, peak oil is something unique. Peak Oil is not reflective of optimism or pessimism, or positive or negative; it's just the result of the finite volume of oil the Earth was endowed with, and the rate at which that oil can be produced. Some way or another we've got to get to where we can be proactive, and we've got to work together.

Q: What about the notion we hear that the US will be energy independent by roughly the end of the decade?

A: There are some, not many, who promulgate the idea that we're going to be energy independent. Bob Tippee, editor of the *Oil & Gas Journal*, wrote an editorial about that, criticizing the boosters. "Energy independence is an appealing idea. So is perpetual youth. The problem in both cases is achievability." For me, it's really hard to understand how the independence crowd could possibly be right; so it's just not the right message to convey. We need to press on with conservation and efficiency improvements, natural gas vehicles, development of a better way to store electricity for use in a vehicle. We don't need to slow down any of those efforts.

Just as it might be better if the industry folks touting energy independence toned that down, likewise those who nitpick every shale oil or shale gas play should perhaps let the people who spend the money—or their shareholders—worry about the economics and just be glad that we have these plays to develop in order to create some more time. There has been a bit of a war between the folks who do things, in terms of discovery and development, and then the folks who review that—the doers vs. the reviewers. The reviewers have been pooh-poohing these shale oil and gas plays, which actually represent a lot of oil and gas…but not enough to solve the long-term problem.

There are also those out there who believe you have to kill off the old paradigm before you can have a new paradigm take its place. Unfortunately, killing off the fossil fuel paradigm is not something anybody wants to do, if they really understand the ramifications. You can kind of feel their pain, though, as you hear the energy independence chatter that may persuade us to relax and cease to be concerned about the finite oil supply. In a sense you can understand their frustration with shale oil and shale gas plays because the broader public hears the optimistic news and says "hey, this isn't any issue any longer."

So I can see both sides here. But we need to work together, not fight one another. Let's all get along. These shale oil and gas plays are stop-gaps and blessings and we need them. We don't need to be fighting against them, but at the same time we don't need to be jumping on the energy independence bandwagon because the numbers just don't seem to add up. There's no way that energy independence can happen when we're producing up towards 8 million barrels a day of crude oil now plus between 2 and 3 million barrels a day of other liquids and we're consuming over 18 million barrels of liquid fuels a day. The idea that we're going to come up with another 7 or 8 million barrels of black oil plays doesn't fit.

There will be other incremental plays: the Niobrara, maybe the Utica, but we know about the three big ones—the Eagle Ford, the Bakken and the Permian. I need to study the Cline more. Devon Energy is going wide open on the Cline, but they quickly saddled up with major outside capital by joint-venturing with foreign companies to pay for it. It's a lot different when somebody else is footing the bill. We've gotten a little negative feedback on the Cline ... I've read where it can have a high clay content, at least in some areas.

Q: I've heard that the Monterey field in California seems to be the one that's the least ready to give up its very large oil-in-place resource. Do you read it that way?

A: The Monterey gets brought up all the time because it has a huge in-the-ground number. It's another question mark. There's a good chance the clay content may be the issue. It gets back to the fact that to work, the rock in an unconventional play needs to break like a piece of glass; it needs to be that brittle to work really well. The presence of ductile clay in high percentages prevents that from happening. So with a high clay content you can't create the necessary spiderweb network of fractures and microfractures to provide exit routes for the oil.

I liken it to a highway system: dirt roads feeding county roads, feeding state highways, feeding interstates that eventually go into 12-lane freeways when you get to downtown…where downtown is the wellbore. You can't create that underground highway network unless the rock breaks well. I'm pretty sure that's the problem with the Monterey.

The Conasauga is a quickly forgotten example of a shale gas play that didn't live up to expectations. There were thousands of feet of low TOC rock, but the bottom line was that due to clay content there wasn't a way to fracture and keep the rock sufficiently open in order to make the play economic. So even though the numbers were huge on an in-place basis—just like the Monterey, but in gas instead of oil—you couldn't create the highway system, so it wouldn't work.

Q: How does the nagging high price of oil fit with your understanding of the viewpoint of the oil optimists?

A: This seems like a huge no-brainer. So I'm confused: If we're awash in crude, after being several years in the big three shale oil fields, why is oil $105 a barrel? Most people say there is a $10 premium for the turmoil in Egypt and/or Syria situations—general tension in the Middle East. That's still $95 oil. So if we're going to be energy independent in the foreseeable future, why is the price so high? One gentleman expressed it as "unprecedented inelasticity in recent years". In other words, despite the price increase the world supply hasn't risen to reduce that price increase - as would the price of an "elastic" commodity or product. That sums it up. That is peak oil!

Raymond James' forecast made in 2012 for the oil price this year was $65 a barrel. They were way off. That's why a friend of mine wrote that "oil price forecasting is like a leaky lifeboat". The reason for that is that oil and gas are priced at the margins. If you have a little bit too much, it may end up getting dumped on the market because zero is what's pulling on it. If there's not quite enough, and everybody has to have it, then the price is pulled by infinity. That all helps make predicting oil prices a real dismal science.

Q: What's happening to your costs in your areas of operation?

A: Costs may have come down a little, but not much. The supply of oilfield services has kind of caught up with the demand, but prices haven't come down much. Water still remains in great demand and disposal costs are still high; the good news is that folks are recycling a lot more and working solutions for using brackish water. Fuel costs are a large component and they're high. So costs just haven't come down too much. Frac sizes continue to increase in size and cost.

Q: Is it fair to say that the anti-fracking crowd isn't having much impact on drilling in Texas?

A: Some reporting rules have changed. Some of those folks are genuinely concerned about the scenario for leaks into clean water tables. I think they might be misinformed as to the distance between the producing formation and the water formations, and about the casing and cement isolation that goes on, and that those must be in place to have successful fracturing jobs. I think some folks are just looking for the perfect emotional vehicle to advance whatever "anti" agenda they might have - because who can be against clean drinking water and preserving our limited supply? An impactful, emotion-inspiring movie can be the perfect vehicle to use to try to stop the development of shale oil or shale gas.

Martin Payne has 32 years of experience encompassing most every aspect of the upstream oil and gas industry, was past chairman, Houston Chapter of the American Petroleum Institute, and member Society of Petroleum Engineers. He is also a believer in solar, wind and biomass - and all renewables. In addition to active conventional and unconventional exploration he operates a small grass-fed beef business, experiments with wood gasification and sits on the board of the non-profit Useful Wild Plants Inc. (www.usefulwildplants.org).