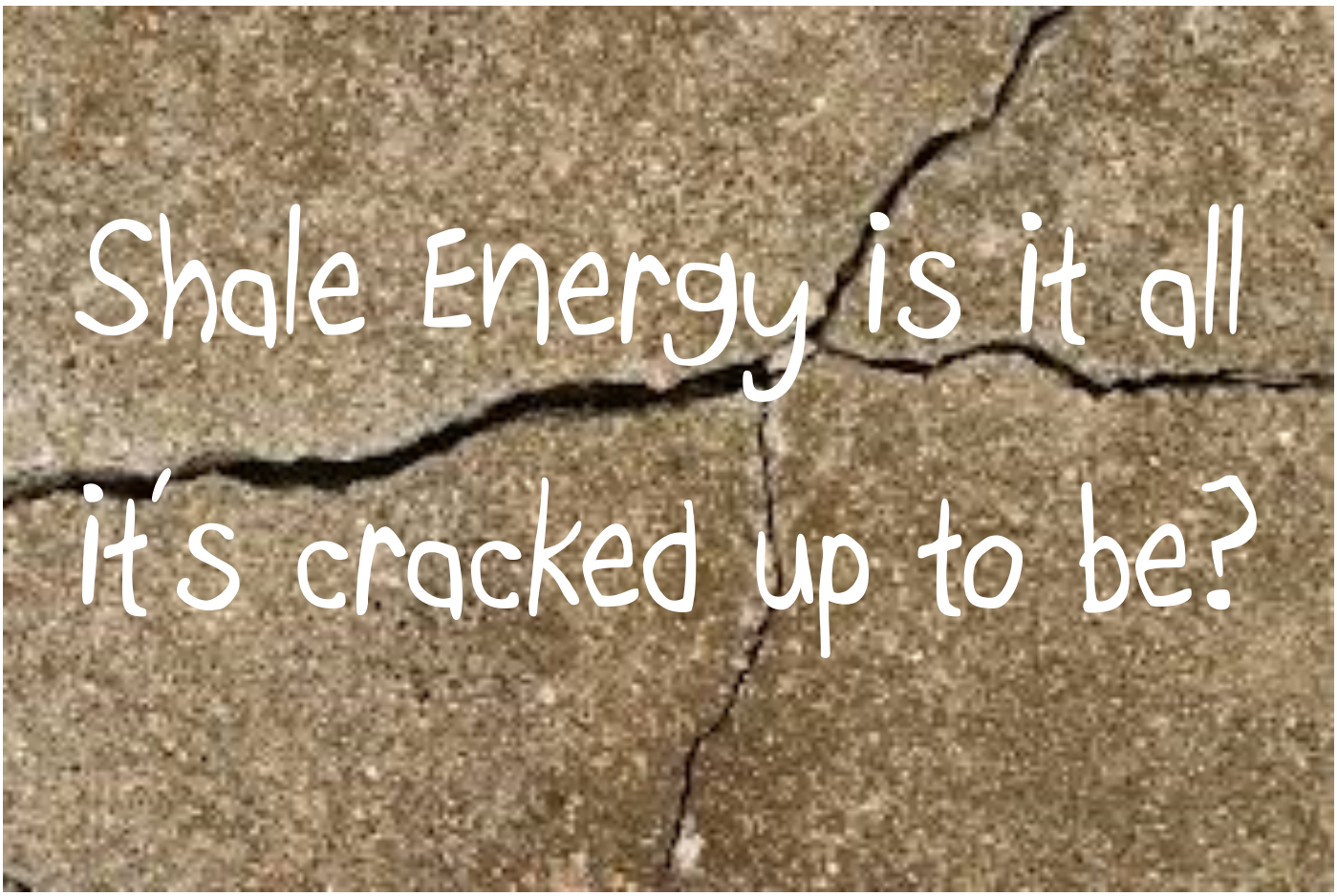


The great hype surrounding the advent of a shale gas bonanza within California might turn out to be just that - hype.
The U.S. Energy Information Administration (EIA), which is the statistical arm of the Department of Energy, in late May downgraded its estimate of the total amount of recoverable oil within the Monterey Shale by 96%.

EIA officials have admitted that previous estimates of recoverable oil within the Monterey shale reserves in California of about 15.4 billion barrels were vastly overstated. The revised estimate has slashed this amount by an extraordinary 96% to just 600 million barrels of oil.
The assessment cut US national reserves by 39%.

The Monterey formation, previously reported to contain more than double the amount of oil estimated within the Bakken shale in North Dakota, and five times larger than the Eagle Ford shale in South Texas, was slated to add up to 2.8 million jobs by 2020 and boost government tax revenues by $24.6 billion annually.

The main reason for the downgrade was that the original 2011 estimate mistakenly assumed that California's shale oil and gas could be recovered with as much ease as it is elsewhere in the country.

However, the geology of the Monterey Shale is much more complex than in the Marcellus, Bakken, or Eagle Ford Shales – the three formations principally responsible for the surge in oil and gas production within the USA. The layers of shale in the Monterey are folded in such a way that drilling is difficult, and test wells thus far have come up disappointing.

The Los Angeles Times quoted a downbeat assessment from an official with the EIA. "From the information we've been able to gather, we've not seen evidence that oil extraction in this area is very productive using techniques like fracking," said John Staub, a petroleum analyst with the EIA. "Our oil production estimates, combined with a dearth of knowledge about geological differences among the oil fields, led to erroneous predictions and estimates," he added.

The oil and gas industry was quick to point out that the calculation could change once again if drillers could improve technology to access the Monterey.
After all, no one saw the shale revolution coming only a few short years ago.
But as Staub, the EIA analyst noted, for now oil and gas production in "the Monterey formation is stagnant." And it could remain that way.

The sharply downgraded numbers come amid a heated debate within California at the present time over whether or not the state should permit oil and gas companies to use hydraulic fracturing ("fracking") – the process in which a combination of water, chemicals and sand are injected underground at high pressure in order to break apart shale rock and access trapped natural gas.
Of course, issues over fracking are nothing new to industry participants, residents, landowners and activists on Australia's east coast, where the 'social licence' of the industry to operate is an extremely hot topic of conversation and much debate at the present time.

The parallels between Australia's east coast and America's west coast are significant. Like NSW and Queensland, California is home to an enormous agricultural industry and with the Monterey Shale being situated beneath the fertile Central Valley, fracking is competing with agriculture, grazing and other commercial and residential users for water use.
On March 20, Santa Cruz became the first county in California to ban fracking. The move may have been symbolic though, since there isn't much of a presence by the industry in that locality. It was aimed more at putting pressure on Governor Jerry Brown to stop fracking within the water-starved state. That follows a unanimous February vote by the city of Los Angeles to ban the practice, the largest city in the USA to do so.

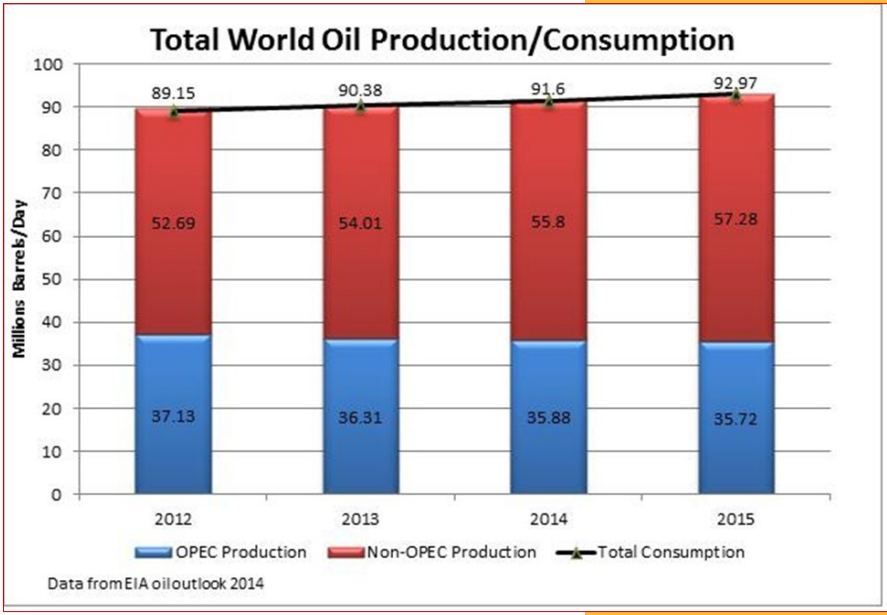
But the issues with respect to California's Monterey Shale are in my opinion even more significant from a broader industry perspective.

Just recently, the cover of Barrons magazine read "Here Comes $75 Oil".
The article argues that due to several new ‘game changers’ within the oil production industry, the oil price would fall to $75 a barrel within the next five years.

The three main reasons it argues that would contribute to cheaper oil are deep-water oil, shale oil and oil sands. All of these new-found resources are estimated at roughly 1 trillion barrels in newfound oil. When added onto the existing global oil reserve that’s currently estimated at 1.5 trillion barrels, this newfound oil is potentially a major factor in the future of oil pricing.

The article also references Citigroup energy analyst Eric Lee,
who believes that most of this new oil could be recovered for around under $75 per barrel, leading to a global decrease in price.

The reality however does not marry up with such an optimistic outlook,
After examining existing extraction cost data, it is hard for the supply-side economics to actually work out and support $75 oil for a sustained period of time.



According to the EIA, worldwide consumption of petroleum products is forecast to grow by 1.2 million barrels per day during 2014 and 1.5 million barrels per day during 2015. This increased demand would put worldwide oil consumption at 91.60 million barrels per day during 2014 and 92.97 million barrels per day during 2015.

Last year, total world oil production came in at 90.33 million barrels per day, compared to a global consumption of 90.38 million barrels per day. The EIA would agree with the Barron's article that new-found oil reserves will offset the current deficit, but current estimates show that newfound oil reserves would only add 1.3 million new barrels of oil to the existing world oil market.

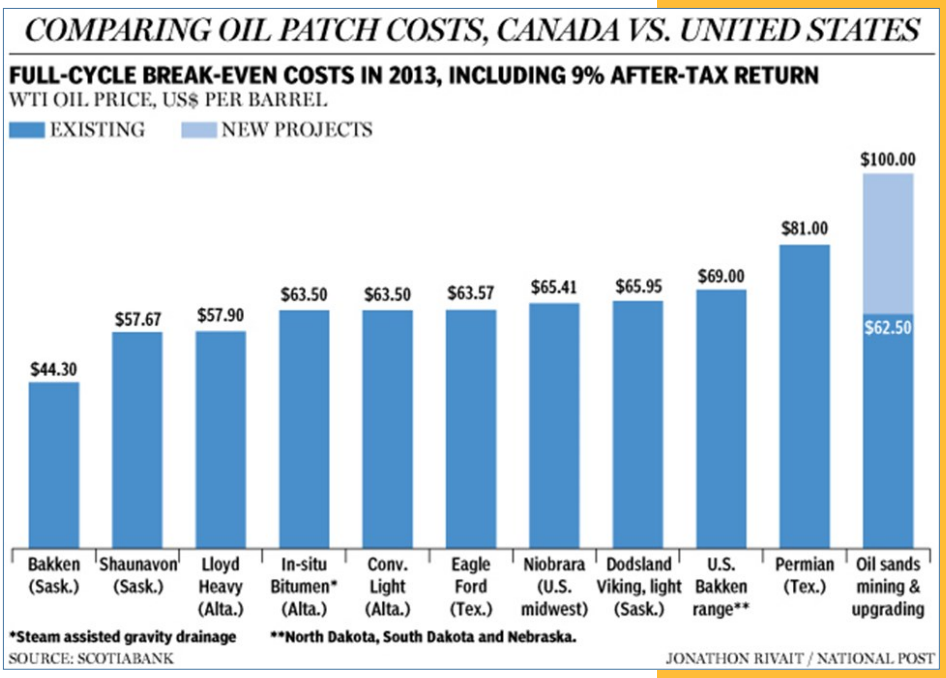
This would put total supply estimates for 2014 and 2015 at 91.67 million barrels per day and 93.0 million barrels per day, a slight surplus, but not enough to justify a 25% decrease in price. The below graph highlights the EIA's estimates for global oil supply and consumption over the past two years and its forecast for the next two years.
With respect to shale oil and gas, its method of extraction and production is difficult and costly.

The primary reason for this is due to the fact that the oil is heavier and flows more slowly. This ultimately drives up the costs of production compared to more conventional oil extraction methods used by OPEC nations. Given the necessary time, difficulty, and cost, shale production break-evens within the US can range anywhere from $60 to $80 per barrel. At current oil price levels, there is room for healthy profits, but if prices were to contract, that healthy margin would evaporate, impacting production.
As oil price contraction becomes a possibility, several of the area's largest producers - Continental Resources, Statoil, and Hess Corp - are all working to try and bring down the costs of production.

Thus far, these firms have been successful at decreasing costs, but given the overall difficulty in extraction, those costs can only come down so far.

> **This should come as a signal that any significant downward change in the price of oil would be a major headwind for the continued operations of these firms, especially as they continue to push to increase output.**

The EIA estimates that this year the U.S. will produce an average of 8.54 million barrels of oil per day. Compare this to the EIA's estimate that the U.S. on average consumes 18.49 million barrels of oil per day. Even with the strongest domestic oil output since 1986, the US is still short by almost 10 million barrels per day of just meeting its own demand. When comparing total estimated US oil output during 2014 to the EIA estimates of global oil demand, US oil production in 2014 will only make up 9.32% of total global demand.



Some might argue that as more wells come online, US production will increase and make up a bigger piece of the pie. However, one of the biggest criticisms of standard shale wells is the short lifespan of the wells. Global Sustainability estimates that the US will need to drill 6,000 new wells per year at a cost of $35 billion just to maintain current production levels. Given this, the firm believes that by 2017 the US will hit its max production levels and ultimately return back to 2012 production levels.

> **Essentially, strong overall oil prices have encouraged the advent of shale energy and are continuing to facilitate its sustainability. Whilst shale can produce vast new volumes of oil, this comes at a cost – and relies on a strong underlying oil price for its sustainability. Shale can supply vast new oil supplies, but we must be aware of its limitations in terms of cost and other impacts.**

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