IMPACT OF US OIL REVOLUTION ON THE GLOBAL OIL MARKET, THE PRICE OF OIL AND PEAK OIL

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Overview

Much has been written about the United States shale oil revolution. Some sources like the Paris-based International Energy Agency (IEA) went as far as to predict that the United States will overtake Saudi Arabia and Russia to become the world's biggest oil producer by 2020 and energy self-sufficient by 2030. Others called it a game changer with a new emerging balance of power in the global oil market. Yet others were in such a state of euphoria about the success of American shale oil production to say that this may deny OPEC the power to set global oil prices and that the world oil industry won't be the same in the wake of shale. Some even claimed that the idea of peak oil had gone in flames.

However, it begs the questions: what is the potential contribution of shale oil resources to the future global oil supply? Will the high development costs, and environmental impacts and challenges affect this potential? And will it be possible to replicate the US success story globally?

US shale production is projected to increase from about 1 million barrels a day (mbd) in 2012 to 2 mbd in 2020. However, this increase would hardly offset the normal annual depletion rate of 3%-5% in US conventional oil production estimated at 1.2 mbd–2.0 mbd, during the same period. Therefore, US shale oil production will hardly make a dent in the global oil supply and its contribution to global supply would only rise from 1% in 2012 to 2% by 2020 possibly reaching 3% by 2035. So a game changer it is not.

With regard to the economics of US shale oil development, the drilling and completion costs for a horizontal shale oil well currently range from $4 to $6 million. This relatively high cost arises from the steep first year decline rate of 70% - 90% for the wells. Nevertheless, a break-even oil price of $72-$80/barrel suggests that most shale oil plays are profitable at current oil price levels.

US oil production is projected to peak at 7.50 mbd in 2019 before it declines to 6.10 mbd by 2035. This means that there is neither a chance for the United States ever to become self-sufficient in oil nor to overtake either Saudi Arabia or Russia in oil production. Moreover, the US will never be in a position to deny OPEC the power to set global oil prices as OPEC would be contributing 48% to global supplies by 2035 compared to 3% for US shale oil production.

The US crude oil market could come to resemble the US natural gas market where excess production of shale gas has led to the collapse of natural gas prices in the US. With rising shale oil production, relatively moderate break-even costs, low financing costs and tight refining capacity across the entire petroleum infrastructure, the ingredients are there for a WTI oil price collapse to $50/barrel within 24 months.

The real reason that once-marginal sources of supply such as shale oil have been catapulted to prominence is soaring global oil prices. Oil prices will have to climb much higher for the IEA's forecast to come true.

As for peak oil, some analysts have claimed that the idea of peak oil had gone in flames as a result of rising US shale oil production. However, the fact that the oil price has been hovering near $111-$112/barrel for the last three years despite the worst global economic recession the world has ever witnessed and the rush for the development of expensive unconventional oil resources, are proof that the peak oil theory is valid and alive.

The pressure on the oil price will,therefore, continue unabated in coming years. The problem is that if the global economic growth is grinding to a halt when oil prices are around $111- $112/barrel, what do you

think will happen to economic growth - and hence global oil demand – if prices reached the even higher levels needed to make the IEA's supply demands come true.

Just like the forecasts the IEA made a decade ago about the much anticipated increase in deep-water production from the Gulf of Mexico, the agency's hopes for another game changer are unlikely to pan out.

Methods

The author will analyze the success and potential of the US shale oil revolution and assess its impact on the global oil market, the price of oil and peak oil.

Results

The paper will argue that US shale oil production would hardly make a dent in the global oil supplies as it would largely offset the decline in US conventional oil production. It will also argue that the US would never be able to overtake Saudi Arabia or Russia in oil production and would continue to be dependent on oil imports for the foreseeable future. It will contend that the US shale oil boom would not be easy to replicate in the rest of the world nor would it invalidate the peak oil concept.

Conclusions

The paper will conclude that US shale oil production will hardly make a dent in the global oil supply. It will also conclude that the US will never be able to overtake Saudi Arabia or Russia in oil production or become self-sufficient in oil. The paper will further conclude that the US shale oil boom would not be easy to replicate in the rest of the world nor would it in any way invalidate the concept of peak oil.

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