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Shale Gas; The Future Energy Source

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ABSTRACT *The Research paper reviews the emergence of new energy source, shale gas. It gives the advantage in shale production and consumption. Paper highlights the strength of developing countries in shale exploration. It discusses the stand taken by pro and anti nations of shale gas. It narrates US success in this area. The recent political change in Ukraine and its role in Shale gas is also highlighted.*

KEYWORDS : Shale gas, Cracking, game changer, tax soaps, gas exploration

Introduction

Developing countries world over has not given much attention to the emerging phenomena of shale gas. Emergence of shale gas, a new phenomenon to serve energy requirement has changed the natural gas scene. Petroleum and natural gas are considered to the monopoly of Middle East countries.

What makes oil rich Middle East countries differ from the rest is their cost advantage in exploration. This monopoly even leads to fights over power. The ongoing restlessness in Middle East can be attributed in commanding the rights of oil wells.

Developed countries especially US has shown remarkable interest in cracking shale gas. Although the shale gas potential of many nations is being studied, as of 2013, only the US, Canada, and China produce shale gas in commercial quantities, and only the US and Canada have significant shale gas production according to Energy Information Administration agency of the United States Department of Energy.

It is a reality that Global commerce is being reshaped in favour of emerging powers like China and other developing nations, with the trend set to continue apace as per the World Trade Organization report. The study report has shown that between 1980 and 2011, developing economies raised their share in world exports from just over one third to almost half, and their share of imports by a similar proportion.

The same report also highlighted the potential impact of the United States' drive to tap its shale gas resources, which comes as rising energy demand from emerging nations raises competition. The shale gas revolution portends dramatic shifts in the future pattern of energy production and trade as North America becomes energy sufficient as per the report.

The Secret of Shale

Shale gas is natural gas that is found trapped within shale formations. It has become an increasingly important source of natural gas in the United States since the start of this century, and interest has spread to potential gas shales in the rest of the world. In 2000 shale gas provided only 1% of U.S. natural gas production; by 2010 it was over 20% and the U.S. government's Energy Information Administration predicts that by 2035, 46% of the United States' natural gas supply will come from shale gas.

Some analysts expect that shale gas will greatly expand worldwide energy supply. China is estimated to have the world's largest shale gas reserves. A study by the Baker Institute of Public Policy at Rice University concluded that increased shale gas production in the US and Canada could help prevent Russia and Persian Gulf countries from dictating higher prices for the gas they export to European countries.

The Obama administration believes that increased shale gas development will help reduce greenhouse gas emissions. Human and public health will both benefit from shale gas displacing coal burning.

A 2013 review by the United Kingdom Department of Energy and Climate Change noted that most studies of the subject have estimated that life-cycle greenhouse gas (GHG) emissions from shale gas are similar to those of conventional natural gas, and are much less than those from coal, usually about half the greenhouse gas emissions of coal; the noted exception was a 2011 study by Howarth and others of Cornell University, which concluded that shale GHG emissions were as high as those of coal.

The reason for the quick attention on Shale gas is its methods of exploration. Unlike conventional gas, shale use horizontal drilling. Hydraulic fracturing is used to crack shale deposits.

The game changer

Till recently as three years back conventional wisdom was that US will have a huge gas deficit and it has to import increasing quantity of LNG. In less than two years, the US supply has changed from one of deficit to surplus. World renowned energy economist Daniel Yergin, chairman of Cambridge Consulting Group has referred to shale gas development as "the biggest energy innovation of the decade."

The stand of UK on fracking gas drills

Recently British Prime Minister David Cameron has urged communities to 'seize' the chance to welcome shale gas drilling near their homes – saying the gas sites are only the size of a cricket pitch. The Prime Minister said allowing the controversial practice of extracting gas will drive down prices for consumers, as well as creating more than 70,000 jobs. And he slapped down the remarks of Lord Howell, who caused controversy by suggesting shale gas drilling should be confined to 'desolate' parts of the north and not 'beautiful' areas in the south. 'It's been suggested in recent weeks that we want fracking to be confined to certain parts of Britain,' Mr Cameron said. 'This is wrong. I want all parts of our nation to share in the benefits: north or south, Conservative or Labour.'

For a newspaper interview, Mr Cameron said he wanted to challenge 'myths' surrounding shale gas exploration, saying there is no evidence it is unsafe or damages the countryside. He said those living near proposed shale gas sites could potentially benefit from lower council tax bills.

The focus of Saudi Arabia

Saudi oil minister Ali al-Naimi opined that US push for energy independence is "naive," saying the country will continue to need Middle Eastern oil long into the future. Naimi said he welcomed the surge in US domestic energy production from shale oil and gas fields, which he said will add depth and stability to global oil markets.

He is of the view that it was not realistic to believe this would help the United States eliminate imports of oil, a goal of some Americans who argue energy independence is crucial for the country's security. To support his argument Naimi points out those US imports of Middle East oil in the second half of 2012 were higher than any time since the 1990s.

Tax free soaps for Shale gas extraction

The latest support for gas exploration came from Polish government recently. They decided to make it tax-free to extract shale gas at home through 2020, as the EU member strives to ensure energy independence from Russia. Poland›s shale gas reserves are estimated at between 800 to 2,000 billion cubic metres and many local and foreign companies have already sunk test wells. Polish Prime Minister Donald Tusk recently said that after 2020, taxes "shouldn't exceed 40 percent of extraction income.

Sustainability over Russian Threat

Russia, which has threatened to cut off gas supplies to Kiev, is Europe›s biggest single energy supplier and its natural gas pipelines mainly run through Ukraine. Poland, which shares a border with Ukraine and is Central Europe›s largest economy, currently, uses around 15 million cubic metres of natural gas annually. Two-thirds of it is imported, mostly from Russia. Now the government plans to invest 12.5 billion euros ($17.3 billion) in the shale gas sector by 2020.

Local and global companies have thus far sunk around 50 exploratory wells in Poland. The firm Lane Energy Poland -- controlled by US energy giant ConocoPhillips -- was the first to extract shale gas in July 2013. The amount was not big enough however to qualify as commercial production. US energy giant Chevron meanwhile announced late last year it had joined forces with Poland›s PGNiG on shale gas exploration in the country›s south.

The stand and the guts of Anti Russians in Ukraine can be viewed attempt to be energy independent from Russia by looking at the very fast developments occurring in shale gas exploration.

Indian Scenario

The country could be sitting on as much as 96 trillion cubic feet (tcf) of recoverable shale gas reserves, the U.S. Energy Information Administration estimates, equivalent to around 26 years of the country's gas demand. Indian law makers must soon approve a policy for shale gas exploration, initially allowing state oil companies holding India's oldest contracts to drill for shale gas. That would give state-run explorers Oil and Natural Gas Corp (ONGC.NS) and Oil India Ltd (OILI.NS) a headstart, although neither has yet to show much appetite for drilling for shale gas.

Of the 356 blocks the two companies hold, India's upstream regulator has said 176 of them possibly hold shale gas resources. These contracts were awarded when India first started a push to find and produce oil and gas after it got independence from Britain in 1947. The old contracts refer to activity related to exploration and output of petroleum, which India's government has interpreted as a broad enough term to cover unconventional energy such as shale gas.

The wording of new contracts for blocks awarded to companies such as Reliance Industries (RELI.NS), BG (BG.L) and Cairn India (CAIL.NS), specifies activity related to natural gas and oil. The Indian government has interpreted this as excluding unconventional energy.

Country	Estimated technically recoverable shale gas (trillion cubic feet)	Proven natural gas reserves of all types (trillion cubic feet)
China	1,115	124
Argentina	802	12
Algeria	707	159
United States	665	318
Canada	573	68
Mexico	545	17
South Africa	485	-
Australia	437	43
Russia	285	1,688
Brazil	245	14
Indonesia	580	150

Source: Energy Information Administration agency of the United States Department of Energy.

Solutions to use the shale gas opportunity

Developing countries need to draw up a policy framework for shale gas exploration that would allow both private domestic and foreign firms to begin drilling for the fuel. They face chronic power supply shortage and yet many gas-fired electricity plants stand idle as these countries lack the fuel to supply them or the infrastructure and cash for expensive imports. Shale gas supplies could eventually help meet demand.

REFERENCES

1. World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States. | 2. Potential Greenhouse Gas Emissions Associated with Shale Gas Extraction and Use. by MacKay and Stone. | 3. "International Energy Agency (IEA). "World Energy Outlook Special Report on Unconventional Gas: Golden Rules for a Golden Age of Gas? | 4. Agency France Presse(AFP) | 5. . "Unlocking the Earth: A Short History of Hydraulic Fracturing". GeoExpro | 6. ""Statement on U.S.-China shale gas resource initiative". America.gov. |