Shale gas in Chile?

Shale gas has always been under the soil, but the technology to economically exploit it was non-existent. Not any more. A decade ago American technology in the Barnett Shale in North Central Texas started what appears to be an energy revolution that could have tremendous effects on world energy prices out of spatially diversified multiple sources. Ten years later shale gas represents 23% of total US natural gas production and is expected to explain almost 50% of it in about two decades time. In terms of world primary energy sources, in 2010 natural gas represented 24% of them; oil, 33%; coal, 30%; nuclear energy, 5%; hydroelectricity, 7% and renewable energy, 1%[1]. US consumed 19% of this world energy; China, 20%, being by far the biggest consumers. In the US, natural gas accounted for 27% of its primary energy needs and represented 22% of world natural gas consumption; in China, 4% and 3%, respectively.

In the world economy, the oil cartel has been by far one of the most damaging and lasting economic imperfections in our time, with negative consequences on its long term growth potential while simultaneously creating a huge wealth redistribution in favor of net energy exporting countries from deficient ones such as the US, China, Japan, the European Union and a much smaller country like Chile. To have an idea, world energy consumption in 2010 was about 12.000 million barrels oil equivalent, which valued at US$ 80 per barrel would have constituted a US$ 9.6 trillion market, approximately representing 16% of world GDP. The oil cartel, with its 42% weight in the oil market, has negatively affected the whole energy market via coordinating producers in a world with imperfect substitution among energy sources and uses, enabling its prices to be above competitive levels. Nuclear energy could be one alternative to effectively face up to this cartel but it is politically unstable and not massive enough yet to dislodge it; natural gas could be a better candidate to take upon this role, much more so when energy deficient countries such as the US and China do also have important shale resources not considered before, besides being a cleaner source of energy than either oil or coal in terms of greenhouse gases. Because it is in their own interest, these important energy deficient countries will try to economically disrupt the energy cartel and in so doing will promote newer sources worldwide. Shale gas could be a good feasible opportunity to meet this policy objective.

The US Energy Information Administration in its recent April 2011 document tittled “World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the US” ascertains that technically recoverable shale gas resources in regions that approximately comprise half of the world amount to a total of 6.622 trillion cubic feet (tcf), out of which the US would have 862 tcf; China, 1.275 tcf; Argentina, 774 tcf; Mexico, 681 tcf; Canada, 388 tcf; Brasil, 226 tcf and Chile, 64 tcf, among others. These resources would increase world gas technically recoverable resources by 40% to 22.600 tcf. To put these figures into perspective, natural gas consumption in the world during 2009 reached 106 tcf, being the US by far the largest consumer, with 22.8 tcf. In that same year, Chilean natural gas consumption amounted to 0.1 tcf. The Chilean area where prospective shale gas resources would be is the Magallanes Basin.

[1] BP Energy Statistical Review 2010

In other words, the US and China, which together consume almost 40% of world energy, do have important shale gas technically recoverable resources waiting and in the process of being exploited. Chile could not have better partners in the quest to develop shale gas resources, for its downward impact on global gas and energy prices and possible southern strategic developments in the Magallanes Basin.

If developed, Chilean shale gas would have to be liquefied to be traded in world markets. As of today, at around US$ 4 per million BTU in the US (Henry Hub) shale gas exploration and exploitation continues its course. Under LNG markets, Chile´s main energy needs in central and northern areas could face gas prices around US$ 8 to US$ 10 per million BTU. If at those prices the Magallanes Basin made economic sense, not only Chile would recoup some of its energy costs but it would also develop areas until now pretty isolated from the world. It might even be the case that Chile could develop a LNG terminal open for Chilean and close-by Argentine natural gas, a country rich in resources but poor in handling them. A bidding process for its development would ensue, allocating exploration and exploitation rights to the ones that offered the highest royalty to the Chilean state for a certain period. The innovative Iraq oil bidding process, allocating oil exploitation for fees that did not surpass US$ 2 per barrel of oil, was a good example as to how to protect and develop this energy wealth, with the proviso that in the Magallanes Basin the certainty surrounding Iraq oil riches is not as clear, at least for now.

The final impact of this shale gas revolution in world energy markets is difficult to assess with today´s information, but if true and fast to develop as it has been for the last 10 years in the US, a new era could be dawning in front of us with lower long term energy prices and less concentrated energy sources. A relative gas surplus, with an increasing weight in worldwide energy markets, would allow the world to return oil prices to its 40 year historic price, around US$ 40 per barrel in 2011 US$. This would also mean related electricity prices would have to be consistent with these new world market conditions, a consistency that could be imposed on publicly regulated prices via not allowing higher prices than those prevalent in competing world economies, assuming increasingly integrated energy markets. Also, “carbon” taxes and regulations could also correct for externalities associated not only to CO2 emissions but also to matter particulates emissions and sulfur and nitrogen oxides. The electricity matrix would then naturally tilt to gas and hydroelectricity, cleaner sources than either oil or coal and certainly more spatially diversified than oil.

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