

FSRU LNG Project

European Commission is trying to secure the reliable alternative supplier for European gas Market. In one side there are European Commission (EC), United States (US) and European Union (EU) member countries which are interested to achieve a semi independency from Gazprom, trying to find alternative gas resources and in the other side there is Gazprom with whom all European Countries are interested to sign cooperation agreements. Certainly Gazprom is trying to turn away any new gas which could come to Europe.

Governments of former Soviet Republics playing their own game, while signing agreements with Russia, European Union and China, agreements which would require an unrealistic number of energy stocks! The most typical cases are Turkmenistan and Azerbaijan, which have promised that everyone will take what it wants to support the sustainability of its own transmission system.

Current situation is an endless war announcement for the construction of new gas pipelines in South East Europe (South Stream, Nabucco, ITGI, TAP, Blue Stream II, etc). The question is: "Is there gas to fill these pipelines? Could this possible gas being extracted?" The real numbers, the geopolitical uncertainties between interested countries, finance difficulties and real situation confirm that there isn't.

So, it is absolutely clear that South East Europe is a very crucial area for any side, because through this area could come new gas in European gas market.

Real Numbers & Current situation.

- **Nabucco Pipeline** (cost 8 bil€, capacity 31 bcm) and
- **ITGI Pipeline** (cost 1.3 bil€, capacity 12 bcm))

Azerbaijan could produce till 2020 about 20 – 22Bcm annually and this could be a reality after second phase completion of Shah Deniz field. This means that in2013 that Shah Deniz could offer 14 Bcm annually.

But on May 2009 Kristian Hausken, president StatoilHydro Azerbaijan, told that the startup of the second output phase would be around 2016 plus or minus. The challenge is to get the transit conditions that can enable Shah Deniz gas to get to Europe. When that is ready then we have a project and then we can see deliveries around 2016," he told. Turkey and Azerbaijan are in talks regarding the transit of the gas, but these have been delayed by demands from Ankara for a share of the gas (15 %) that will pass through Turkish territory.

From this volume 3 Bcm are for Azerbaijani and Georgian markets consumption (1,5 Bcm for each one) and the rest 11 Bcm for European and Turkish market. But Turkish has already contracted 6.5 Bcm annually. So, the remaining gas which is 4.5 Bcm is the gas volume which could fill Nabucco and ITGI which need 43 Bcm/an. Because both pipelines are targeting the Azerbaijani deposits. Edison announced that Turkey has to receive parts of the contracted 6.5 Bcm till 2020, otherwise ITGI is not viable. Also in 2009 Gazprom agreed with SOCAR to import 1 Bcm/an and last January (2010) agreed to double this volume in 2 Bcm/an. On September 3rd 2010 SOCAR and Gazprom signed a supplement to

their gas supplies agreement today. Based on the document, Azerbaijan will increase gas exports to Russia to 2 billion cubic meters per year from 2011, and to over 2 billion cubic meters per year from 2012.

- **TAP Pipeline.**

Proposed by EGL, StatoilHydro and E.on. They will move to Italy 5.5 till 10 bcm from Iran and Caspian resources. Cost is estimated 1.5 bil €. Recent announcements exclude Iran.

But no one explained how all these new gas volumes (excluding Nabucco) could be moved through the existed Turkish pipeline system.

- **South Stream Pipeline.**

Initial capacity 31 Bcm/an, first revision 47 Bcm/an, second revision 63 Bcm/an. Initial cost 20 bil\$, revision cost 32 bil\$.

Let's we see how Gazprom will fill this pipeline. We'll use the data that Alexander Medvedev (Gazprom's vice chairman) used last February, 2009 in Moscow presentation.

South Stream is able to move 47 bcm/an. (It was the first revision).

Nord Stream is able to move 55bcm (27,5 in 2011 and 27,5 in 2013).

Total volume 102 bcm/an.

Gas production possibly will be reduced in 2009 to 510 Bcm/an vs 550 Bcm in 2008.

Exports will reduced to 170 Bcm in 2009 vs 179 in 2008.

Exports planning in 2015 are estimated to 220 Bcm. This means 40 Bcm more than 2008 exports. If we calculate these figures we'll see that 40 Bcm are not enough to fill Nord Stream. However Nord Stream has secured gas volumes from Yamal, Yuzhno Russkoye and Shtokman fields, although there are delays in these fields also. Which gas will fill South Stream?

Turkmenistan case.

Gazprom maybe counts on Turkmen gas. This presuppose doubling Russia's intake of Turkmen gas from 2007 level. Turkmen gas exports in 2007 were 50 bcm approx. with the prospect to be 70 Bcm and on July 2008 Alexei Miler announced that Gazprom would finance 4-6 bill \$ in new infrastructures.

But after an explosion in gas pipeline from Turkmenistan Gazprom manage to change the agreement with Turkmenistan. New one is: gas imports for 2010 will be 10.5 Bcm with the prospect being 30 Bcm. The rest 40 Bcm have already been contracted with China. So Turkmenistan will export from 2012- 2013 40 Bcm to China. This means that China acquired a strong presence in Central Asia.

Also, Gazprom agreed with CNPC last December (2009) the cooperation regarding the supply of Chinese gas market with Russian gas.

Uzbekistan case.

Gazprom imports from Uzbekistan were 10 Bcm/an and last December agreed for 4.5 Bcm furthermore.

Hypothetically, Russia could feed this pipeline by diverting some volumes from Ukrainian transit pipelines into South Stream, but this option was being discussed theoretically even before the January 2009 Russia-Ukraine gas conflict.

Finally South Stream project is proving too ambitious on all counts, unbankable in Europe and unsourceable with Russian gas to the declared volume.

- **Blue Stream II Pipeline.**

Proposed by Gazprom several years ago, and negotiated until 2006 with several interested governments, Blue Stream Two was to extend the Blue Stream One pipeline. In current circumstances, Moscow's preferred solution may well be a return to Blue StreamTwo.

Blue Stream capacity would be 8 bcm/an and an estimated cost 5 bill \$. (Blue Stream One 16 bcm/an and cost 6 bill \$).

Under these market conditions, a Group in cooperation with EC could undertake the main role in the geopolitical game in South East Europe, if is able to connect new gas resources with EU's gas market.

If this Group with EC is interested about this role and if is interested to be the leader in this game, has to achieve the following:

- To has access in such gas volume, which could create confidence in European Gas market for the existence of these new gas resources, and has
- To find the solution for the movement of this gas volume to European Gas Market, so that this new gas could influence gas prices, but especially politics.

Today Qatar is the only gas producer that could play the role of the reliable alternative supplier for European gas market, not with confirmed deposits that no one knows when they could be extracted or through potential pipelines that no one knows when they could be constructed, but with direct supply. This means that we are talking about LNG. Furthermore only one fast and flexible way exists, if someone is interested to deliver LNG in South East Europe today. This way is the FSRU (Floating Storage Regasification Unit) LNG vessels.

FSRU LNG Project advantages.

- No discharging terminals required.
- No problems with environmental restrictions or terrorism threats.
- No problems with population protest.
- LNG chain cost reduction.
- Allocation management risk to others.
- Short term and fast negotiations.
- Limited competition (yet).
- The existence of remote LNG terminals.
- Flexibility compared to traditional LNG projects.
- Most critical, the existence of an alternative gas supplier for European gas market.

Critical Reasons that could push FSRU LNG Project development.

- European Commission (EC) revised its strategy, regarding safety supply two years ago. New one is based on LNG.
- Russian/ Ukrainian crisis which had a crucial effect in European gas market.
- EC's decision regarding new pipeline construction between Greece – Bulgaria and Bulgaria – Romania.
- Gazprom's Socar's cooperation agreement in gas.
- Iran still remains under sanctions from global community.
- Current surplus LNG production in Qatar, because of global limited consumption due global recession and shale gas development in US.
- The geopolitical competitive game in South East Europe.

Market Capabilities.

- European Commission's revised strategy.
- European Commission has proved the interconnection between Greek/ Bulgarian gas pipelines systems (the developers are Edison, DEPA, BEH) and interconnection between Bulgarian/Romanian gas pipelines systems with extension options to Hungary, Serbia and Central Europe.
- European Commission has two options for the South Corridor, which is South East Europe. The first option is Caspian Gas Resources. The other option is LNG. European Gas Market has understood that Caspian gas is very difficult to be a reliable alternative supplier, mostly because of Gazprom's strength and Caspian Countries governments' credibility.

FSRU LNG Project

FSRU's location would be permanent. The LNG would be transported to FSRUs through conventional LNG vessels. FSRU's location would be in a port or offshore (preferred).

FSRU's location in North Aegean Sea in Greece in Kavala or Komotini city.

From this location a Group in cooperation with EC could supply: Greek gas market, Bulgarian gas market through interconnection between Greek pipeline system with Bulgarian pipeline system and Romanian gas market through interconnection between Bulgarian pipeline system with Romanian pipeline system.

These interconnections have been proved from EC and supported from EC, US and the interested countries.

Interconnection's extension options to Hungary, Serbia, Croatia, Austria and Central Europe.

Option for gas deliveries to ITGI pipeline.

Option for gas deliveries to TAP pipeline.

Option for gas deliveries to Nabucco pipeline.

Conclusions.

The FSRU LNG Project is less gas business and more politics. South East Europe is one of the “hottest” areas in global gas business and there is in progress a wild competition between European Commission/United States and Russia and thus all proposed gas pipelines are coming through this region. At the moment Gazprom is the winner in this hard competition, because EC and US are trying to compete Russians in a pipeline race and in pipelines competition no one is able to win Gazprom under current market conditions. Only sector that Gazprom is weak is the LNG business and only gas player who is very strong in this sector is Qatar.

Almost three years ago all proposed pipelines were colored lines on the map. That period I had proposed the project to Greek Energy Authorities, I had discussed it with some of European energy giants and I had proposed the interconnections through national pipelines systems. Interconnections are viable, flexible and cheap solutions, contrary to expensive, long and very slow negotiated gas pipelines. Until today all proposed pipelines continue to be colored lines on the map, but Qataris LNG are real gas volumes.

LNG Business Development Manager
8, Gravias str, Dafni, 172 35
Athens, Greece
Tel: +30 210 5322000 Mobile: +30 694 090000
e-mail: info@poyry.com

Representative of Energy Poyry Srl
www.poyry.com