



Energy Challenges in the Black Sea Area

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**INTERNATIONAL ODESSA FORUM
PROMOTING ENERGY SECURITY AND
INVESTMENT IN THE BLACK SEA AREA:
THE ROLE OF MULTILATERAL COOPERATION
TUESDAY 27th JULY 2010 |**

CITY HALL, ODESSA, UKRAINE



Energy Opportunities

Serious attention being paid to the Black Sea as a hydrocarbons province in its own right.

- Ukraine: Vanco and the Prykerchenska block
- Romania: Melrose Resources - & Vanco
- Bulgaria: Total, Anadarko
- Turkey: Chevron, ExxonMobil, TPAO, Petrobras, BP.
- Georgia: Anadarko, BP.

“We believe there are 10 billion barrels of oil and three trillion cubic meters of natural gas in the Black Sea,” TPAO President Mehmet Uysal.

Mixing Up Oil & Gas: The New Pipeline Conundrum

- Interconnection not only between production and export routes, but between gas and oil export routes.
- Russia has specifically linked development of Samsun-Ceyhan to South Stream, having first linked expansion of CPC to BA.
- Is it conceivable to imagine Odessa-Brody being used in the way it was intended without resolution of the South Stream issue?
- And if Ukraine gets its way on South Stream, does this mean it has to adopt Moscow's position with regard to Odessa-Brody?
- What does the South Stream Issue tell us about prospects for Russia-Ukraine relations?
- Russia's dilemma: How to handle Ukraine in the short term; how to deal with – accommodate – Ukraine in the long term.

What does this mean for Ukraine?

Energy Independence? IE, gas sector independence.

- Offshore supply: Vanco
- Onshore supply: coalbed methane – Donetsk
- On shore demand: energy efficiency.
- 1004: 47.0 bcm gas consumption; 17.3 production. Net imports : 29.7 bcm (but less due to reserve drawdown, probable net imports of c.25 bcm in 2009).
- Ratio of reserves to production (R/P ratio) : 51 years.
- Ratio of reserves to consumption: 20.8 years
- Why not cut 25bcm/y imports to 5-10 bcm/y or even zero?
- But at what cost?

Global Crisis – Eurasian Energy Implications

The interweaving of bilateral and multilateral issues

Multilateral:

1. A gas world with fewer guarantees as it moves to more flexible market structures.
2. Shale gas: Significant impact on thinking by 2015;
Significant impact on output not before 2020.
2. The reduced importance of take-or-pay
3. South Stream & The Southern Corridor

Bilateral:

1. Russia-Ukraine
2. Russia-Georgia
3. Turkey-Azerbaijan
4. Russia-Turkmenistan

Eurasia: Gas Pipeline Systems, June 2010



Caspian Gas & the Black Sea

Azerbaijan:

- Shakh Deniz and beyond
- A 30 bcm gas exporter? If so, when?
- Turkey Plus
- 1. Nabucco, ITGI and TAP
- 3. Bulgaria CNG 1-2 bcm/y
- 3. Romania LNG 7-20 bcm/y

Turkmenistan:

- A genuine exporter
- South Yoloten/Osman
- Trans-Caspian aspirations

Kazakhstan:

- No real interest in westward gas exports; only limited interest in exports to China.

Eurasian Pipelines: The Shakh Deniz Game Changer - 1

Core issues settled in the 7 June agreement.

1. Resolution of the price issue for SD-1 Gas sales to Turkey;
Settled with transformation from a flat price to a market-based system, backdated to April 2009.
2. Pricing mechanism for SD-2 gas sales to Turkey itself;
Formula not disclosed.
3. The question of transit to Greece;
Settled on basis that Turkish-Greek border will be the pricing point.
4. Azerbaijani supplier access to customers in Turkey.
Settled with Socar securing "the right to be a free seller on the Turkish market and to deliver gas to Turkish customers." N. Aliyev, 29 June 2010. Specifically, Azerbaijan will supply Petkim, the Turkish petrochemicals company in which the Socar holds a controlling stake, with 1.2 bcm/y from SD-2.
5. Volume of gas for Turkey itself:
Settled with agreement Azerbaijan will supply 2 bcm in 2017; 4 bcm in 2018 and 6 bcm in 2019 and every year thereafter.

Eurasian Pipelines: The Shakh Deniz Game Changer - 2

The new SD-2 Timetable

- The 26 April – 7 June Socar-Turkey agreements
- 2H-2010: Gas sales negotiations start
- IH-2011 Final Investment Decision
- 2011-2015 €20 bn project implementation
- 2016-17 First SD-2 Gas
- 2018 Full Field Development. c.16 bcm/y increase; total field output: c. 25 bcm/y.

Eurasian Pipelines: The Shakh Deniz Game Changer - 3

Pipeline Implications - conceptual:

- 2H-2010: Nabucco, ITGI and TAP start gas supply negotiations. (Nabucco's 'Open Season' can be viewed as a counterpart to SD-2 Gas sale negotiations).
- 2H-2010-1Q 2011: Nabucco Financing
- Early 2011: FID for either Nabucco or ITGI or TAP – or a combination.

Expect delays on all these, not least because of “technical issues” that still need to be settled between Socar and Turkey.

Eurasian Pipelines: The Shakh Deniz Game Changer - 5

Implications for other Caspian producers:

- Short term: potential availability in SCP c.2013-2016
- The need for much greater South Caucasus capacity beyond 2018.
- Implications for Turkmenistan (and theoretically Kazakhstan). Should they be taken into account for a 2014 pipeline system, for a 2018 pipeline system. Or are they irrelevant?

Turkmenistan: Taking Advantage of New Openings

The Short-term issue: Petronas and the issue of stranded gas

- Petronas: 8-10 bcm of gas output by 2013-14

Options:

- The Caspian Coastal Pipeline (Pri-Caspiy) to Kazakhstan and Russia. Technical capacity: 14-16 bcm/y: effective capacity, probably 7-8 bcm/y without significant repair.

Turkmen attitudes:

One: Renovate and upgrade CCP (Pri-Caspiy), as envisaged in the May 2007 agreements with Russia and Kazakhstan.

Two: Opt for a trans-Caspian solution.

- “Obviously, we are ready to supply gas for Nabucco when it reaches us,” said a Turkmen government official who asked not to be named.
- “As early as next year, 10 bcm can be exported from the Turkmen Caspian shelf where Petronas is working.”

Source: Reuters – Ashgabat 19 November 2009

CCP/Pri-Caspiy Issues

- But does Russia want Petronas/Dragon/Burren gas
- If so, on what terms?
- Does it envisage a return to the concept that it is Turkmen gas that will, in effect, be used to supply Ukraine – if so, would it be at the discounted price Russia has agreed with Ukraine?

Where the EU needs to get its act together

Development of a Trans-Caspian Gas Transit System

This requires:

- A single interface
- A single project
- A public sector face for what may well prove to be a private sector project
- Development of a quid pro quo with the Turkmen authorities:
- Delivery of a turnkey gas export transportation system to the borders of Turkmenistan in exchange for a bankable commitment – ie a commercially financeable dedicated programme, covering supply provision for a Trans-Caspian Gas Transit System.

Caspian Impasse

Q: What's the solution?

A: If there is one: It's Oettinger

Why?

- The need to meet Turkmen criteria
- A single telephone number
- A single political authority (even though implementation would be essentially left to the private sector).



Questions?

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