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***“Alternative Gas Supplies and Gas Pipelines
to the Balkans and SE Europe”***

***Strategic Considerations, Challenges
and Risk Management Issues***

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The all new Energy Landscape



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- ❑ Unprecedented macroeconomic, social, regulatory, geopolitical and market trends/uncertainties reshape the entire energy landscape
 - ❑ The European gas sector in particular faces a number of all new key issues and challenges:
 - ✓ Market liberalization and new business models evolution
 - ✓ Security of supply issues
 - ✓ Long-term investment decisions
 - ✓ Environmental protection concerns

Natural Gas in Europe



- Due to its own attractive energy, economic and environmental characteristics natural gas became the fuel of choice in Europe during the last two decades
- Gas demand in EU-27 from some 300 bcm in 1990 reached to 520 bcm in 2006 and the gas share to the EU's primary energy consumption climbed to 24,5%
- The impressive growth of the European gas market was the result of simultaneous socio-economic development in the EU's member states, well prepared and focused energy and environmental EU's policies, as well as tremendous technological achievements across the entire value chain of the gas industry and not only

Natural Gas in Europe



- However during the last two years two critical questions are more and more frequently asked by the energy analysts:
 - a) ***Will the robust gas demand growth rates of the past years in Europe continue in the decades to come?***
 - b) ***to which extent security of gas supplies in Europe could be considered as secured?***

Natural Gas in Europe



- Although the majority of the energy analysts agree that natural gas will continue to gain market share in the years to come, many of them have started to argue that gas demand growth rates in Europe will be slowed down due to a completely new reality in the energy sector
- Among others energy experts base their new forecasts and views on a number of all new parameters such as, emerging climate change policies, regulatory and geopolitical uncertainties, gas availability and reduced natural gas competitiveness against other fossil fuels and other forms of energy

Natural Gas in the Balkans and SE Europe



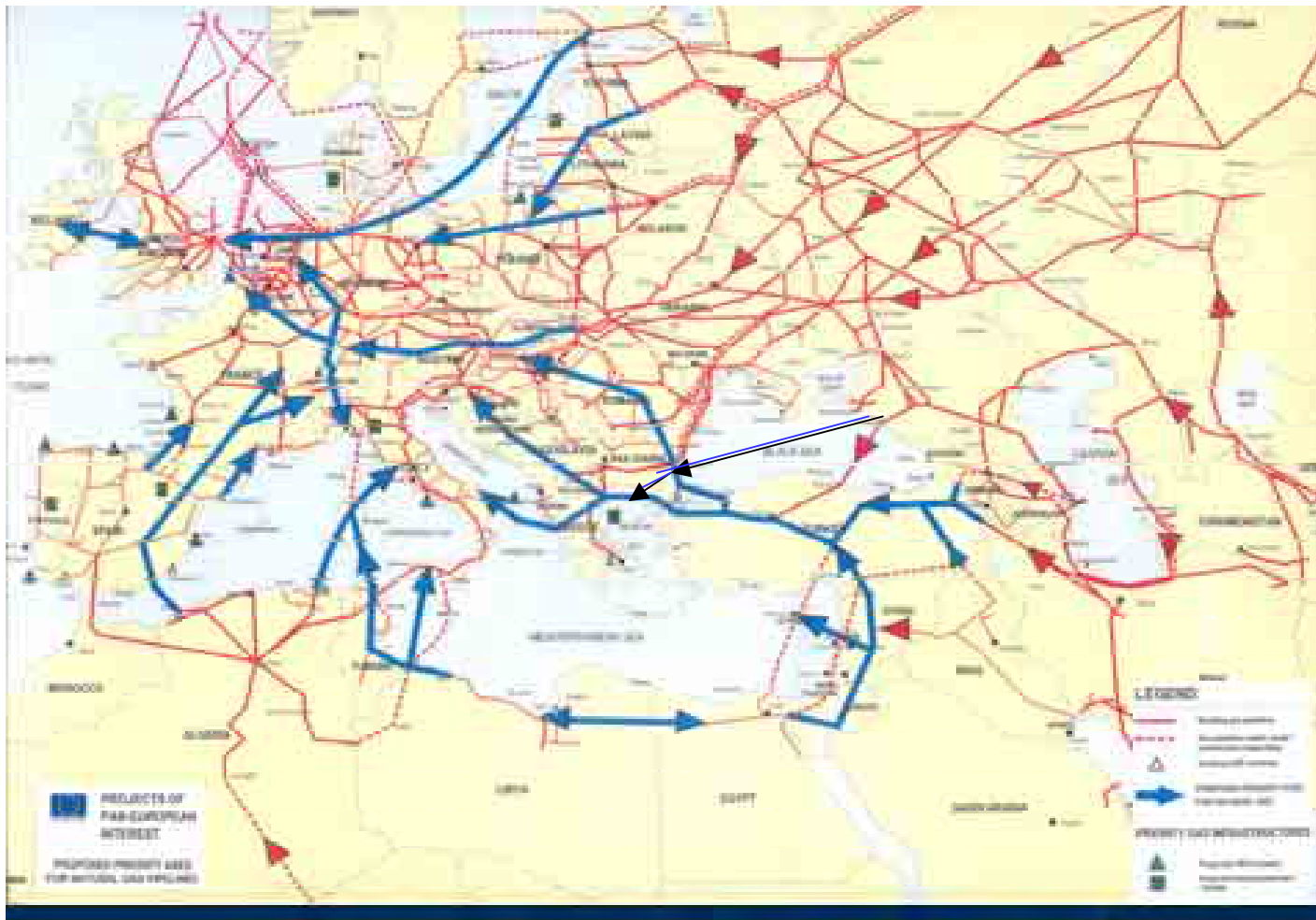
- In the Balkan and SE European countries gas demand was also increased during the past decades, although the growth pattern was quite different, mainly due to the political reforms of the '90s in certain countries of the Balkans
- Gas demand in the area is expected to further increase in the years to come, although with temperate growth rates in some countries
- Regional gas market growth will come nearly from all sectors of the economy but will be mainly driven by power generation needs as well as by the continuing process of economic development and demographic /social change

Natural Gas in Balkans and SE Europe



- Within this very specific context of the region a large number of new gas supply projects are already in place or/and have been proposed and are either under construction or under consideration:
 - the South Caucasus Pipeline
 - the Blue Stream Pipeline
 - the Turkey-Greece-Italy Interconnector
 - the West Balkan Pipeline project
 - the Nabucco project
 - the Trans Adriatic Pipeline project
 - the Green Stream Pipeline
 - the Galsi project
 - the Medgaz project
 - the all new South Steam project and finally
 - a number of new LNG facilities, mainly in Italy, but not only

Natural Gas in Balkans and SE Europe



Natural Gas in Balkans and SE Europe



- If the majority of the above new gas supply projects is to be implemented in the near future, it is obvious that gas demand in the Balkans and SE Europe will be easier covered and security of gas supply in the area will be tremendously enhanced
- However, in nowadays security of gas supply doesn't depend only on the existence of adequate pipelines capacity and long-term gas supply contracts
- It's a very complex issue that could be affected by various geopolitical, regulatory, socio-economic and even psychological parameters (and uncertainties), all of which ask for specific attention and strategic consideration by both governments and the regional gas industry players

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- ❑ The ongoing gas market liberalization process has eroded to a great extent the past decades' comfortable business environment
- ❑ The new reality in the European gas markets (Balkan and SE European gas markets included), is full of regulatory and business uncertainties (especially in the current transition period) and along with some inefficiencies and barriers, that still prevail in nearly all the European gas markets, may seriously affect the implementation of some at least gas supply projects in the area, as well as gas demand in the region itself

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- ❑ **The new world economic reality under which Europe (and consequently Balkans and SE Europe) will be probably forced to compete for scarce gas supplies with other regions**
- ❑ Under such circumstances European gas supplies in medium and in long-term will be constrained
- ❑ Europe must give much more attention and make very substantial efforts to secure gas supplies from both Russia and alternative sources eg the Caspian Region
- ❑ Although in both cases huge investments for new gas infrastructure are needed, particularly in the case of Russia new production and transportation assets have already become a must, since gas production at Urengoi, Yamburg and Medvezhe is “coming off the plateau”

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- The stagnation of the EU-Russia energy dialogue along with the dogmatic notion that Gazprom demonstrated the last two years (concerning its indisputable role in gas supply), reinforce Europe's concerns over Russian gas in terms of security of supply
- Although the Russians have a 40-year history of reliability as gas exporter, many European countries (including SE Europe) are very sensitive to further increase their import dependence on Russia and thus gas demand in certain countries of the area could be seriously affected in the years to come

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- ❑ **The intense political and diplomatic competition between USA and Russia to increase influence in certain former CIS countries and to secure “control” in a number of gas producing countries and gas transiting routes in the broader Caspian and Middle East region, directly affects Europe’s efforts to diversify its gas supplies**
- ❑ This ongoing and long-standing “energy war” creates a very unstable business environment for investors and lenders as well as a lot of geopolitical uncertainties and instability in many producing and transiting countries
- ❑ The above situation affects seriously security of gas supply in the Balkans and SE Europe

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- ❑ The environment protection awareness worldwide together with the official EU's policies aiming at a considerable increase of the RES share in the European energy balance, may be perceived as a serious demand risk by gas producers and TSOs in the long run
- ❑ Long term security of gas demand is a very crucial parameter for gas producers and TSOs and its absence may affect negatively their decisions to implement massive investments for gas production and gas transport infrastructures (especially in the today's uncertain business environment)

Gas Demand and Security of Supply Issues in the Balkans and SE Europe



- The persisting high oil prices during the last years (more than tripled in nowadays after 15 years of low prices) sweep along also natural gas prices due to their linkage and thus the competitiveness of natural gas is directly affected especially for uses in power generation
- The ratio of the gas prices to the coal ones (in constant 2005 prices per toe) from about 1.5 in the '90s reached 3 in the last two years
- These circumstances led many countries and power producers to abandon their original investments plans for gas-based power plants and apart from RES, turned also either to base-load clean coal technologies power plants or even to nuclear plants

Dealing with Challenges and Risks in Interstate Gas Pipelines



- Long-distance interstate gas pipelines are required to link gas resources to markets, creating economic, political, environmental and social challenges for all the countries and companies involved
- Since challenges mean both opportunities and risks, should be carefully and timely taken into account by all the involved parties (governments, regulatory authorities, gas pipeline companies and their investors and lenders)
- The TGI Interconnector is a typical example of a big scale interstate gas pipeline project and as such is facing a number of challenges, uncertainties and risks during its planning, construction and operation stages

Dealing with Challenges and Risks in the TGI Pipeline



□ Geopolitical uncertainty and instability

- ✓ Geopolitical uncertainty and instability in the broader Caspian and Middle East region may seriously affect the availability of gas needed to be contracted and transited through the TGI
- ✓ For the time being, due to generous USA support, only the Azeri gas seemed to be a realistic alternative for the TGI pipeline, while the Iranian and other Middle East gas sources are very unlikely to be considered as such in the near future

Dealing with Challenges and Risks in the TGI Pipeline



□ Political and Ethnic Stability

- ✓ Due to their EU membership and to their long lasting political system Greece and Italy considered as zero risk countries from the political stability point of view
- ✓ On the contrary, political and ethnic stability in certain upstream countries like Azerbaijan, Georgia and even Turkey cannot be considered that have been assured in the long-term
- ✓ Consequently, specific proactive actions needed by both the Italian and the Greek government, as well as by Edison and DEPA, in order to offset this kind of risks (intergovernmental agreements, concrete supply and transiting contracts based on international laws, direct EU's intervention etc)

Dealing with Challenges and Risks in the TGI Pipeline



□ Security Issues

- ✓ Domestic security is always crucial for the gas pipeline companies, since it is a precondition to decide upon investment and ensure that their staff can safely build and operate a gas pipeline
- ✓ While security considered as given for Greece and Italy doesn't happened the same in the upstream countries, where potential regional conflicts, ethnic or/and terrorism threats exist
- ✓ All the involved countries and companies should take specific proactive actions and measures, in order to reduce the relevant risks

Dealing with Challenges and Risks in the TGI Pipeline



□ Regulatory Uncertainty

- ✓ Investment decisions as well as effective planning, construction and operation activities of any interstate gas pipeline are greatly depend on the existence of clear, stable and timely known regulatory rules across all the hosting countries
- ✓ Unfortunately in the TGI case there are still a lot of regulatory gaps and uncertainties, which could have tremendous implications for timely completion and profitable operation of the project
- ✓ Governments, regulatory authorities and gas pipeline companies involved across the entire South European Gas Ring should systematically and hardly work in a productive way to eliminate the soonest possible all the regulatory gaps/uncertainties, in order to minimize the relevant risks

Dealing with Challenges and Risks in the TGI Pipeline



□ Technical and Technological Challenges/Risks

- ✓ There are no serious technical and technological risks related to TGI and the upstream pipelines, since high international standards and up-to-date technology have been adopted
- ✓ All the involved companies across the South European Gas Ring (BP, BOTAS, DEPA and Edison) have good records in oil/gas pipelines construction and operation
- ✓ However, there are still some areas of concern which need either specific technical approaches and sophisticated engineering solutions (construction works in difficult terrain conditions, pipeline protection from possible earthquake damages, effective crossings of various rivers and pipes laying in deep waters) or/and commonly accepted operational, maintenance and safety principles, in order to reduce the relevant risks

Dealing with Challenges and Risks in the TGI Pipeline



□ **Social and Environmental Challenges/Risks**

- ✓ Long-distance interstate gas pipelines cross a number of national borders, pass through sensitive environmental areas and affect both the livelihoods of indigenous people and the local ecosystems
- ✓ Therefore, pipeline companies should have social and environmental issues at the center of their attention and strategy
- ✓ They should carefully develop relative checkpoints for the above challenges, not only during engineering and construction phases but also during the entire operational life of their projects and adopt effective risk management strategies in order to reduce or eliminate the relevant risks

Dealing with Challenges and Risks in the TGI Pipeline



□ **Social and Environmental Risks (cont)**

- ✓ In the South Caucasus Pipeline the Equator Principles (the World Bank's Guidelines) have been applied
- ✓ In the Greece-Turkey Interconnector specific environmental studies have been carried out especially for the protection of sensitive areas eg Dardanelles Straits and Evros River, while in the Greece-Italy Interconnector DEPA and Edison give great attention to social and environmental issues both for the terrestrial and the sub sea pipeline (engineering and environmental studies for best route selection, protection of Natura and archaeological areas, care of sensitive ecosystems etc.)
- ✓ Furthermore, consensus from local authorities and societies as well as from international and local NGOs should also have high priority

Dealing with Challenges and Risks in the TGI Pipeline



□ Viability and Financial Challenges/Risks

- ✓ No doubt that these challenges and risks are the most important for any interstate gas pipeline project since they could substantially affect both business foundation and profitability of the projects
- ✓ Viability and financial risks in interstate gas pipelines may occur from alternative gas pipelines or LNG facilities competition, from unexpected gas demand deviations in targeted market (-s) and from market competitors in a given area

Dealing with Challenges and Risks in the TGI Pipeline



□ Viability and Financial Risks (cont)

- ✓ For example under the current competitive and uncertain market conditions in SE Europe, gas demand may exist in a given market (say in Italy), but there is no guarantee that a certain gas company (say Edison) will manage to catch and benefit from it
- ✓ Or due to the expected intense competition among gas supply pipelines or/and LNG facilities in the area may occur deviations in the gas volumes which the pipeline companies have assumed that are necessary to support their projects development and operational costs

Dealing with Challenges and Risks in the TGI Pipeline



□ Viability and Financial Risks (cont)

- ✓ Therefore, construction schedules and budgets, availability of gas in terms of signed Gas Supply Agreements and Gas Transiting Arrangements with all hosting countries, built-up profiles, full-transportation costs and secured revenues stream are very critical for any pipeline project viability
- ✓ Unfortunately, in the TGI pipeline the majority of the above mentioned key issues are still pending and thus the project is for the time being exposed to high viability and financial risks

Dealing with Challenges and Risks in the TGI Pipeline



□ Viability and Financial Risks (cont)

- ✓ TGI is going to face fierce competition from alternative gas sources (eg Russia, Norway and North Africa piped-gas or/and LNG), from alternative gas transport pipelines (eg South Stream, TAP, Galsi) and from market competitors in Italy and in the Balkans
- ✓ The only positive developments are the TPA exception granted recently by the EU to Edison and DEPA for the sub sea part of the TGI and the Intergovernmental Agreement signed by the Italian, Greek and Turkish governments last July, both of which are very important towards the reduction of the relevant risks

Conclusions I



- Balkan and SE European countries may not be in a position to take full control of all the above mentioned issues, challenges and risks that affect security of gas supply and gas demand in the region
- However, **EU, local governments and regulatory authorities** should enhance their **cooperation** and increase their **common efforts** in order to:
 - grant political support to new regional gas transport pipelines and secure alternative gas supplies for the region
 - create a fully functioning regional gas market
 - establish stable and effective regulatory framework at a regional level and
 - facilitate unhampered cross-border gas trade

Conclusions II



- ❑ Similarly and complementary, **regional gas pipeline companies** should improve what risk experts call **outside-in thinking** in order to:
 - be in a position to read and correctly interpret the today's complex business environment and
 - further strengthen their internal capabilities needed to secure operational effectiveness, to make concrete and right business decisions under uncertainty, to execute massive investment plans within budgets and schedules and to apply effective risk management strategies to mitigate certain gas supply and gas transiting-related risks

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