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## Towards a Balkan gas hub: the interplay between pipeline gas, LNG and renewable energy in South East Europe

*Executive Summary*

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South Eastern Europe (SEE) is served by an opaque energy market. Market transparency is constrained by executive government control over statistical and other regulatory institutions, the deterioration of professional associations and limits to public participation. Governments are deeply involved in commercial transactions, which discourages innovation and market development, and are focused on (natural resource and transit) rent seeking. The rule of law, including enforcement of international legal compacts, is arbitrary and constrained. There are massive barriers to entry.

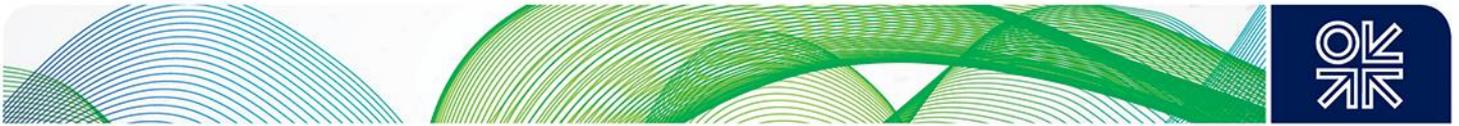
Domestic energy production (gas, crude, fuel wood, lignite and hydro) facilitates a system of subsidies that are intended to maintain the economic and social status quo. Lignite, gas and crude resources are poor in quality and/or productivity of extraction. This subsidy based regime is only competitive during periods of high international energy prices. In a low price environment, the resource rent turns negative and environmental impacts increase as governments soften control of environmental constraints in lignite extraction and combustion as well as crude and gas processing.

Crude and gas from the Russian Federation dominates the SEE import portfolio. Russian companies control oil refineries in Romania, Bulgaria, Serbia and Bosnia. Gazprom is the main gas supplier to the entire region and the only producer of domestic gas (and oil) in Serbia. Its gas export is associated with a network of subsidiaries, resellers, agents and sponsorships that are granted special rights in their respective countries of operation. This system is supported by the availability of “on demand” credit resources that contribute to the soft budget constraint and facilitate the operation of low efficiency district heating systems, emergency power generation and inefficient (fertilizer, etc.) industries. It is, however, critical for the security of residential heat and food supply. This formal and informal network of control goes way beyond monopolistic market behavior and constitutes an effective “stick and carrot” government capture system.

In this governance context, and if the current supply and demand structure remains, SEE will have an increased energy security risk due its exposure to a disruption in gas supply via Ukraine.

Governments are granted significant credit resources from sovereign creditors. Soft budget constraint and the fragility of the remaining domestic energy resources create fertile ground for destructive entrepreneurship to create and promote projects. Government’s project prioritization is taken into consideration by international institutions despite the actual quality of governance or project credentials. The probability that some Government-backed projects are going to be funded creates uncertainty for any (competing or complementary) commercial projects. Uncertainty on actual enforcement of international compacts (Energy Community Treaty, climate change, etc.) creates an additional layer of risk.

SEE energy supply is carbon intensive above the EU average. As demonstrated in Chapter 5.2 (and 3.4.1), Greece (followed by the rest of region) consumes more lignite per capita than any other country in the World. Once a reservoir of European biodiversity the region is now exposed to massive



environmental impacts and deforestation that already impacts water regimes, and increases risks of flooding and droughts - further exposing the region to climate change risks. Furthermore, there is very little (if any) ambition to contribute to climate change mitigation based on the national submissions to the UNFCCC Paris conference.

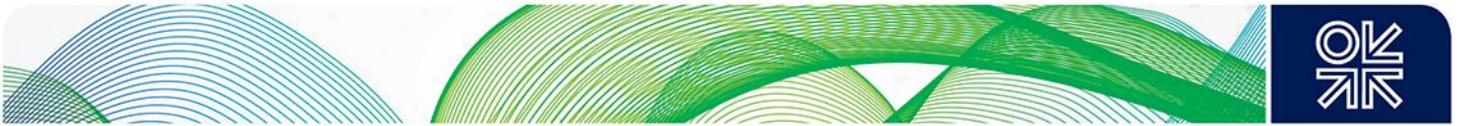
“Destructive entrepreneurship” is evidenced by the range of lignite based power generation projects being promoted across the region. Project promoters have taken every opportunity to circumvent environmental regulations, increase the cost of closures, abandon environmental investment, conceal the reality of low productivity, ignore the human health impacts, persuade international creditors to grant funds and infiltrate and influence government structures. The ability of lignite mines to periodically manipulate overburden removal rates and influence the weighted average cost of energy (WACE) is a critical soft budget constraint mechanism. However, the depletion of economic lignite resources, aging plant and infrastructure, liberalization of electricity markets and EU environmental regulations have created a ‘perfect storm’ that now threatens the lignite-to-power industry. Taking into account that lignite provides about 2/3 of power to the region, the prospect of phasing out lignite within the next 8-10 years creates a massive security of supply challenge. This energy supply gap could be addressed by the increased supply of natural gas which has attracted the attention of various suppliers. The substantial security risks resulting from a massive shift from lignite to gas without the adequate change of governance patterns and gas market formation are hardly affordable within the current strategic framework.

Energy demand in SEE is sensitive to weather patterns to a greater degree than in the rest of Europe. It is also subject to the enforced credit terms and liquidity related to actual enforcement of payments for natural gas, electricity or oil products as well as various separate barter arrangements or cross subsidies. The volatile availability of hydro power impacts the weighted average cost of energy (WACE) as hydro power is focused on supplying local markets regardless of the opportunity cost. Consequently, utilization rates of available infrastructure and power generation capacity fluctuate wildly around a very low weighted average. Low WACE is mirrored in a low retail price of electricity that creates an effective barrier to entry for new investments and energy efficiency improvements.

This problem is magnified by a high weighted average cost of capital (WACC) for commercial transactions. Bad governance is key to simultaneously (1) constraining the adequate use of existing infrastructure, (2) promoting resource-destructive new infrastructure, (3) confusing public policy and (4) maintaining a high WACC. Together with other uncertainties and barriers to commercial investments, persistent bad governance in this region deprives the rest of Europe of alternative oil and gas supply options as well as any meaningful competition in energy intensive industries (physical openness and transportation) and the use of Balkan hydro resources to respond to intermittency to facilitate renewable energy elsewhere in Europe. Being aware of its affiliation with the Russian oil and coal export interests, the incumbent gas supply monopoly has an interest, the means, experience and opportunity to maintain current governance arrangements in this part of Europe.

In contrast, the European Union (EU) is looking toward this region as an option to improve its security of gas supply and diversify its supply portfolio. This encourages local expectations of transit rents and is based on the assumption that the region may host the following: Southern Gas Corridor, North-South Gas Interconnection and Central/South Eastern Electricity Interconnection. There are more overlapping energy transit projects being considered than in any other region in Europe.

This paper sets out a realistic roadmap that is able to overcome existing barriers and provide the desired level of security of supply:



1. Gas consumption that does not yield positive economic returns is to be phased out by energy efficiency, use of renewable energy and opening to international markets. This is sufficient to eradicate the immediate security of supply risks and establish a framework for the commercially sound use of gas;
2. Flexible Black Sea & Balkans (BS&B) Gas Hub through the improved use of existing infrastructure and
3. BS&B Gas Hub facilitates gas trade with the rest of Europe that promotes more efficient use of gas, market opening, industrial restructuring and increased renewable energy integration – all beyond the expectations indicated in various current strategic documents. A BS&B Gas Hub is envisaged as a private commercial undertaking in order to increase the liquidity at BS&B Gas Hub and attract commercial supplies from the Black Sea basin.

This Roadmap intends to unlock improvement in the quality of governance, commercialize WACE, decrease WACC, reduce uncertainties and facilitate investments. Economies will benefit from the better utilization of dormant capital, improved liquidity and hardening of budget constraints.