

There are many externalities that challenge developing the European-Caspian energy link. At one extreme, these externalities can strain the energy concerns of many of the smaller, land-locked Central and Eastern European states and can end up driving prices higher for end-users. At the other extreme, Caspian gas producers hesitate to commit to over-supplying markets, with the potential knock-on effect of driving gas prices lower to their detriment. However, there is a middle ground to be sought that at once calculates the cost-benefit of enhancing European energy security and at the same time puts forward a rational argument for increasing European market access to Caspian gas producers.

## Externalities in European gas

The explosion of shale gas development in the US is diverting LNG deliveries destined for the US market to Europe. This makes LNG shipments from Qatar, for example, attractive on European gas spot-markets, it puts downward pressure on delivered piped gas prices to European consumers, and it has even fueled talk of shale gas development in Europe itself. The further development of the Arab gas pipeline is another project of interest, potentially tying Egyptian gas delivery through Turkey to the lingering Nabucco pipeline. The European Union's demand management objective of a 20% reduction in energy demand through the introduction of energy efficiency measures, particularly in the building sector, should help moderate a steep rebound growth trajectory for gas demand in a post-recessionary period. However, changes, alterations, and advancements in technology could actually spur future demand for gas liquids or stimulate future demand for gas-fired electricity if advanced battery-technologies are introduced on a broad scale, providing for the large-scale deployment of electric or gas fired vehicles. These are only some of the trend lines that both gas producers and consumers will contend with over the coming decade as domestic European gas reserves continue to decline while gas remains the fuel of choice for European power and industrial production.

The European-Caspian link today has an even more immediate set of challenges to overcome. Looming large among these is Russian dominance over the European gas market and significant gas import dependence by many of the post-2004 EU Member States. For years, the EU has regularly dealt with Russian gas as though it were an unalterable aspect of supply. But since 2006 the gas issue has been as overtly political as much as it has been commercial. This has given rise across Europe to intensified discussion about energy security and increased scrutiny within energy ministries and defense and intelligence communities on the role that energy plays within a national security framework. It is on the energy security issue that Caspian gas producers have a comparative advantage over their Russian counterparts, and this is an advantage that should be exploited.

Comprehensive energy security at the national, regional, or even global level is different than simple supply security, which can be defined as sufficient supply to meet anticipated demand.

# Calculating Energy Security: How to Functionally and Reliably Develop the European-Caspian Gas Link

Written by Kevin Rosner

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Energy security rests on three pillars: diversification in power generating capacity (fuel-mix), diversification in the transit infrastructure that carries commodities that are ultimately combusted for power or transportation purposes, and diversification in the country-of-origin of supply. Those along the entire energy supply chain from producer to consumer have their own, often competing, definitions of their own energy security. Producers want accessible markets that can meet their price expectations, and end-users require available supply at what they consider reasonable prices. When a nation fails to meet its own national energy security objectives by failing to address the diversification issue, markets become susceptible to behavior that is manipulative in nature.

To use an analogy from the oil market to illustrate the point regarding nuanced differences between energy security and supply security: When OPEC makes oil available to global markets, it provides a thin buoyancy to oil supply in what is typically a tight market. This does not address the security vulnerabilities associated with oil dependency, particularly in the transportation sector. Nor does it address growing global dependency of supply on a handful of OPEC producers that manipulate output, and by association price, for this monopoly commodity. In fact, whatever supply stability that exists in oil markets today is attributable more to a decline in economic activity and therefore reduced demand than it is due to the efforts of cartel producers to maintain sufficient oil supplies at reasonable prices. For the past two decades, increased demand for oil has been largely met by non-OPEC oil producers. OPEC today is not producing a single drop of oil more than it did in 1973. This is indicative of monopolistic, or more appropriately, oligarchic behavior.

The same can be said for the European gas market. Increasing gas supply availability to downstream European countries is a good thing. But if steps are not taken to diversify the country-of-origin of delivered gas then security vulnerabilities stemming from dependency on a predominant supplier, in this case the Russian Federation, remain unresolved. No number of gas transit diversification projects or plans changes the fundamentals of this reality if delivered gas maintains, or more importantly, increases dependency on an already dominant supplier. This observation may appear evident, but in practice real progress towards natural gas supply diversification has been poorly addressed by the gas-dependent collective of the EU.

For Caspian states seeking to functionally and reliably compete in and diversify into the European gas market, the message should be that Caspian gas provides a national security premium to European consumers. Caspian gas meets the objective of a diversification in source of supply (country of origin) for import-dependent European states.

## Deepening the link through calculating costs

The status quo of European energy security, or more appropriately, the continent's litany of energy insecurities, is not cost-free. European energy insecurities have associated costs that should be elaborated upon by advocates for deepening and expanding the European-Caspian energy and gas link.

When triggered by an energy event, people and countries know immediately that their energy security is in jeopardy. The cost of gas supply disruptions, price shocks, power blackouts and shortages are all calculable. Unfortunately these costs are frequently calculated in a post-event environment as the cost of not having done something, or having done too little, to mitigate the actual cascading costs of an energy event. There is an argument, however, that in order to effectively catalyze energy policy, we should calculate the cost of energy insecurity in a pre-event environment. This would help define measures that would assist an energy system to withstand the disruptive impacts of a negative energy-event.

One example that might give weight to the argument for adding to Europe's already built environment for gas delivery, or for diversifying its gas by country of origin, is taken from the US experience with the Katrina disaster. US analysts, in the post-Katrina period, estimated that the clean-up costs for that natural disaster were 15 times greater than if preventative or more effective responsive steps had been programmed in the first place. It is unknown whether the Katrina ratio for determining the costs of disaster relief versus disaster prevention holds true for the costs of bolstering energy security for European nations. What is possible though is to exercise due diligence through an economic analysis of what the most cost-effective steps are towards energy-security enhancement. At a minimum, the successful execution of such an exercise would provide benefit to both Caspian producers (as grist for negotiations) and to European energy consumers in estimating the net economic value of energy security and/or the net opportunity cost of doing nothing.

## Second step

Calculating the cost of enhancing a nation's energy security is not an intuitive exercise. One illustration that bears this out is comparing the pathways that the Slovak Republic and the Czech Republic followed in the period since their mutual independence in the 1990s. Analysts Andrej Nosko and Petr Lang have pointed out that the Czech Republic has taken several decisive steps to correct their asymmetric dependency on primary energy resources and Russian gas, whereas the Slovak Republic has been slower to act in this regard. They write,

"That particular country [Czech Republic] was equally dependent [as other Central and Eastern

European countries in the post-Soviet period] on a single source for energy imports for all of its imported uranium, oil and gas ... yet has since managed to successfully diversify its energy imports. This prodigal country, the Czech Republic, has been the only landlocked country of Central and Eastern Europe to establish an effectively functioning energy market. The choices made in the early transition period by the Czech government have provided the country with higher energy security, which in return has enabled the government to exercise greater political and economic liberty in its policies as compared to some of its neighbors.”

It is only through comparison, in this case with the Slovak Republic, that the magnitude of importance of the steps the Czech Republic has taken can be fully appreciated and then measured in economic terms. Norsko and Lang write with respect to the current energy-security history of Slovakia that,

“After failing to secure its own energy supply (and especially natural gas) for years, Slovakia was one of the worst hit countries in Europe during the 2009 Russia-Ukraine gas crisis. According to some sources, Slovakia lost 100 million Euros a day, or 1 billion Euros over the duration of the entire crisis, and the gas-cut related recession led to a 1-1.5% decrease in GDP (Duleba 2009). National tax revenues in January 2009 dropped by 40% (due to both the gas crisis and the recession). Some Slovak companies, as part of their own contingency plans, which were to be invoked in the event of an energy crisis, even began to prepare to relocate parts of their production elsewhere. Some companies chose not to disclose an exact quantification of their losses (not even to the Ministry of Economy), so the real extent of the impact remains unknown. This is a real wake-up call of what happens when energy security is taken for granted.”

### Lessons learned

First, getting a handle on fuel diversification, by country of origin, is important for both gas importing states and Caspian producers seeking direct access to downstream European markets. This need not be a ‘what-if’ exercise involving future scenario planning, but rather an exercise in ‘what-might-have-been’ in Slovakia’s case had they strictly adhered to a diversification strategy in all three domains. Second, if both alternative gas importers and Caspian producers work together on determining the economic fallout of the gas crisis (with Slovakia as but one of many potential case-book examples) then the future value of diversification strategies can be cost-compared. In this case, Slovakia is a small country and one can well imagine that had even one interconnector been built for supply diversification, then the economic benefit of this diversification strategy would have rendered real monetary value to the Slovak economy by having mitigated the estimated \$1 billion loss in economic activity over

the duration of the Russian-Ukraine crisis. This doesn't even begin to scratch the surface of the other intangible benefits of energy security—allowing for enhanced national sovereignty, clear lines of decision making in the national interest, and a more secure and sustainable future for citizens.

Interestingly Slovakia at least in part based its national energy security strategy on the crucial role that it plays in transiting Russian gas to other EU Member States. Obviously successive Slovak administrations thought its key role in transiting Russian gas provided a level of domestic security which in fact did not play out during the 2009 Russian-Ukraine gas crisis. The measurable fall-out was that on top of lost tax revenue, a loss of economic activity at 100 million Euros a day, and a precipitous fall in GDP, Slovak consumers ended up paying higher prices for gas than neighboring states. This either discounts the benefit of Slovakia's key role in transiting Russian gas, or it accentuates the importance of Slovakia's failures of diversification and interconnection, or both. Future gas transit states, positioned to take part in new Russian gas transit infrastructure, may want to consider the implications of the Slovak-case.

### Getting with the program

Setting aside a discussion of the issue of subsidiarity enshrined in Article 5 of the Treaty establishing the European Community, the European Union now appears ready to act on the behalf of its Member States to take more seriously the issue of community-wide energy security. In its Communication of November 2010, "Energy 2020 - A strategy for competitive, sustainable and secure energy," the EU announced a call for approximately 1 trillion Euros in new investment to complete the internal energy market, to advance EU climate change objectives, and, in doing so, to bolster European energy security. It has stated that no EU Member State (in all directions) should be isolated (as some presently are) from a stable cross-border flow of electricity and gas after 2015. However, it is again vastly important to remember that no number of gas transit diversification projects or plans changes the fundamentals of enhancing diversification if delivered gas maintains or increases dependency on an already dominant supplier. This is the unique comparative advantage that Caspian gas producers have over their Russian gas counterparts and should be reiterated by Caspian producers at every opportunity.

Energy security is complex because it is not a strictly mechanistic exercise. Rigor can, and admittedly should, be brought to bear on determining the economic value of pre-event decisions (contributing to a built environment for energy transit, as an example) versus the fall-out cost of hesitating to proceed with fuel-mix alternatives and additions to robustness in power generating capacities. These considerations leverage the added value of alternative European gas supplies in achieving the end-game of gas diversification, measured by diversification in the country-of-origin for these supplies. As in most cases within a European framework, these considerations involve the role of the state, as they should.

Enhancing energy security is not strictly a business-to-business proposition. States have a

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unique role to play in this equation. States have an enlightened self-interest in maintaining economic continuity and performance, in protecting their citizens through the provision of essential goods and services, which in the industrialized world include heat and light, and in providing for national security. If states can be encouraged to diversify their energy resources despite short-term obstacles such as monopoly competitor pricing, then competition can begin to be introduced in captive markets. Doing so will open up Europe to Caspian gas, enhance overall EU energy security, and lessen the Russian Federation's ability to leverage its energy power over non-energy decision making in energy dependent downstream states. This will provide sustainable energy security and a more robust national security profile for those who participate in this diversification exercise.

But this will not happen by itself. Numbers need to be crunched and strategies pursued that champion the net added value of Caspian gas to European energy consumers and their security. It might end up that, if allowed direct European market access, Caspian producers could even offer their gas at only a marginal cost premium to competitor monopoly pricing. But the upside of such a premium must be demonstrated in numerical terms. The responsibility is on the producer to pursue this task, with a potentially substantial reward for doing so.

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