

ENERGY SECURITY IN CENTRAL EUROPE AFTER RUSSO-UKRAINIAN GAS DISPUTE: EN ROUTE TO A NEW APPROACH OR BACK TO BUSINESS AS USUAL?

43.

AUTHOR: ERNEST WYCISZKIEWICZ

REVIEWER: ANDREJ NOSKO

Keywords

Central Europe, dependence, diversification, energy policy, energy security, gas crisis, natural gas, oil, Russia

Introduction

Regional Energy Landscape

Russian Strategy: Toward Asymmetrical Interdependence

Energy Security in Central Europe: Perceptions and Responses

Conclusion

Introduction

The January 2009 gas crisis between Russia and Ukraine severely hit the EU and particularly its Central European members. This unprecedented almost two-week long suspension of deliveries in the middle of winter brought significant financial losses and gave rise to a new wave of questions about energy security, diversification and transparency of gas market in a situation of over-reliance on a single supplier and route.

The dispute revealed the constraints of the current EU energy security policy. The long-awaited crisis management mechanism turned out to be limited only to intra-corporate support. The EU-wide shield was obviously non-existent and the Presidency's and the European Commission's actions had to be focused on exerting political pressure only. A lack of both sufficient preventive and responsive security measures became self-evident, though, to some extent, mounting political pressure from the EU played a role of catalyst (not a direct cause certainly) in coaxing conflicted parties into reaching a consensus. Apparently, both sides (Russia and Ukraine) realized that costs stemming from further escalation of the conflict would exceed expected benefits.

Interestingly enough, the crisis was not over for some of the affected countries even after the Russo-Ukrainian agreements had been signed and deliveries re-instated. For Poland (relatively safe during the crisis because of the functioning import route through Belarus and full storage facilities) and Hungary the implications turned out to be more far-reaching. The Russo-Ukrainian decision to remove the opaque inter-

mediary RosUkrEnergo from their gas relations led to the elimination of the company from the gas supply schemes of Poland and Hungary, for which RUE was an important supplier. The subsequent take-over by Ukrainian Naftohaz of RUE's gas stored in underground facilities effectively obstructed valid contracts between Polish and Hungarian companies and RUE and forced them to empty their own storages to cover the deficit. Poland was forced to launch talks with Gazprom on a short-term contract to buy the missing volumes and re-design the long-term agreement. Hungary, on the other hand, witnessed a series of murky operations with ownership transfers on its own gas market. The largest gas distribution company Emfesz was taken over by the opaque company RosGas (registered in December 2008 in Switzerland) with alleged connections to Gazprom. Obviously, these events revealed significant challenges to regional energy security other than just a risk of becoming a hostage of another Russo-Ukrainian crisis, and just over-dependence on imports. What matters is also a completely unclear way of pursuing gas business in the region, which to some extent is a by-product of a single supplier's primacy. While the EU is calling for exporting its business standards into neighboring countries, it is actually importing opposite phenomena that easily cross EU borders and flourish in a more liberal environment.

The question is whether the January crisis was serious enough to produce a significant change in regional energy policy patterns or should the Central European energy schism rather be treated as a more permanent factor.

Regional Energy Landscape

In seeking the reasons for regional discrepancies and diverse policy responses to energy challenges, it might be useful to start from a quantitative overview of the current energy situation of Central European Countries (CEC) in terms of their primary energy supply, demand, import dependence, diversification of supplies and contractual relations.

Table 1. Primary energy supply in CEC (2007)

	Solid Fuels	Oil	Natural Gas	Nuclear	Other
Slovakia	23%	19%	29%	24%	5%
Hungary	11%	29%	42%	13%	5%
Czech Republic	45%	21%	16%	14%	4%
Poland	57%	25%	13%	-	5%

Source: European Commission, Europe's Current and Future Energy Position. Demand-Resources-Investments, Working Document accompanying the Second Strategic Energy Review, November 2008

Table 2. Import dependence of CEC (% in 2006 consumption)

Import Dependence	Oil	Suppliers (share in imports)		Natural Gas	Suppliers (share in imports)		All fuels
		Russia	Others		Russia/ via Russia	Others	
Slovakia	95% (5.7 Mt)	100%	-	98% (6.6 bcm)	100%	-	62%
Hungary	78% (6.9 Mt)	99%	1%	82% (14.2 bcm)	91%*	9%	62%
Czech Republic	98% (7.8 Mt)	67%	33%	100% (9.3 bcm)	74%	26%	28%
Poland	98% (19.7 Mt)	97%	3%	68% (13.7 bcm)	92%*	8%	20%

* Poland and Hungary bought Central Asian gas through short-term contracts with the intermediary (RosUkrEnergo) connected to Gazprom, so these volumes should be counted as imports from Russia.

Source: National oil and gas companies' websites (PGNiG, SPP, MOL), BP Statistical Review 2007, Energy Information Administration (U.S. Department of Energy), European Commission.

Tab. 3 Oil and gas imports from Russia and transit capacities (2007)

	Natural gas im-ports from Russia (bcm, 2007)	Transit to other markets (bcm, 2007)	Oil imports from Russia (Mt, 2007)**	Transit to other markets (Mt, 2007)
Slovakia	6.2	84 (CZ, HU, AUT)	5.5	4.6 (CZ)
Hungary	7.5	4.4 (B&H, SER)	6.5	negligible
Czech Republic	7.2	30 (GER)	5.2	negligible
Poland	7 (9.5)*	32 (GER)	18.2	28 (GER, other markets via Gdansk oil terminal)

* including gas bought by Polish Oil and Gas Company (PGNiG) and Hungarian MOL from RosUkrEnergo, which nominally was Central Asian, but in practice was controlled by Gazprom through its monopoly over Russian gas networks, exports and 50% share in RUE.

** Oil data from Transneft's Annual Report 2007, www.transneft.ru.

As far as energy mix is concerned, CEC can be divided into several groups. Poland and the Czech Republic are heavily dependent on domestic coal used for power generation. Nuclear energy is an important source of energy for three of CEC (excluding Poland). Last but not least, for Slovakia and Hungary natural gas is a far more important energy source than for the others.

All CEC are heavily dependent on oil and gas imports, in particu-

lar from or via Russia (this distinction is just ceremonial, because Russia controls Caspian oil and gas that is transported through its territory). Poland and Hungary almost entirely rely on Russian deliveries of oil, while in the case of gas this dependence is significant but not as heavy thanks to their own production¹. Slovakia is totally dependent on Russian oil and gas supplies with just a potential for diversification². The Czech Republic managed to diversify both oil and gas suppliers through establishing a gas link to the German system giving access to Norwegian gas, and building the IKL oil pipeline that gave access to oil arriving at the Trest terminal³.

In terms of the current and future market potential CEC are each of similar significance to Russia. Taken as a whole, they buy almost 20% of Russian gas and oil exported outside CIS, but individually they are far behind the largest Western European buyers. Understandably, Central Europe's neither current nor future market power is likely to become a significant factor influencing Russian policy (let alone an efficient leverage in the hands of CEC that would be plausible only if V4 countries combined their strategies which is highly unlikely). Hence, it might become a security problem if the increasingly likely scenario of Russian oil and gas exports deficit were to come true. Russia would then probably concentrate on the largest markets (Germany, Italy) which partly thanks to Russian initiatives became also relatively Russia-friendly.

The chief energy legacy of the Cold War period is the infrastructure stretching from Russia to Central and Western Europe. Central European countries serve as a very important transit corridor for Russian oil and gas running west. There is no other way for now to transport Russian gas to Germany but only via Polish or Slovak/Czech territory. The key transit actor in the field of gas within the region is definitely Slovakia. About 20% of natural gas consumed in the EU, and about 70% of Russian gas exported outside the CIS, is transported by Slovak pipelines. Unsurprisingly, transit is perceived in Slovakia not just as a source of revenues but, more importantly, as a tool for improving energy security, as a sort of existing and potential insurance against interruptions. Poland is an important corridor for Russian gas and oil as well, but it has chosen a different strategy and focused primarily on supply diversification projects, such as gas interconnection with the Danish system to obtain access to Norwegian gas (now suspended) or entering the LNG market. Polish governments have from time to time shown an interest in expanding transit capacity for Russian gas provided that it would not be linked to an increase in contracted volumes from Russia so as not to

¹ Despite total reliance on Russian oil and just partial on natural gas, Poland is more secure in terms of oil supply because of the Gdansk oil terminal, which would give access to alternative sources in case of supply interruption.

² There is a possibility to diversify oil supplies using the connection with Adria oil system (and possibly also with the IKL pipeline if the Czech-Slovak section of Družba was technically prepared for reverse flow) and to diversify gas supplies through contracts with Western companies supplying their local subsidiaries.

³ This pipeline helped the Czech Republic easily survive the temporary reduction of Russian oil deliveries in July 2008 which allegedly happened due to commercial reasons. Yet the coincidence with Czech approval to the deployment of a part of the U.S. Missile Defense system gave rise to speculations about possible political motives behind this cut-off. Nonetheless, this event demonstrated that a strategy of diversification seriously decreased the level of vulnerability to external pressure coming from a dominant supplier.

hamper diversification plans. Such a solution was unacceptable for Gazprom.

Russian Strategy: Towards Asymmetrical Interdependence

Russia locked up Central European markets through long-term gas contracts based on the “take-or-pay” rule and a destination clause that forbids re-export. The contract with Poland (renegotiated in 2002) expires in 2022, with another round of talks opened in spring 2009. In late 2008 Slovakia prolonged its contract with Gazprom till 2028. The Czech Republic did the same in 2006 to 2035, but it also struck a deal with Norway valid to 2017. Gas deliveries to Hungary are based on several contracts which are going to expire in 2012 and 2014. Long-term contracts with the “take-or-pay” clause are typical for international gas business, specifically when they are linked to the construction of infrastructure, so, there is nothing unusual or unexpected about Gazprom’s strategy towards its customers in Central Europe, a strategy that is meant to block any real competition. In this sense Russian contractual moves serve both as an instrument of expansion and protection.

Russian tools may be colloquially divided into carrots and sticks used to fuel regional controversies and obstruct any form of energy unity from developing. Typical Russian positive offers consisted of promises to establish gas hubs, to develop underground storage and to maintain transit role in return for such concessions as prolongation of long-term contracts, direct access to end-consumers and support for strategic pipeline projects (e.g. South Stream). This tactic has worked well, particularly with respect to Hungary and Slovakia, both seeking to become key European centers for energy trade. Noticeably, Russia has openly been treating Central Europe not as a bloc but as a set of separated markets which can be played against each other. By submitting simultaneously similar offers to Central European countries, Russia aimed at boosting competition for the privilege of closer relations with Gazprom as well as at dividing the region into “friends and foes”. Slovakia and Hungary were usually defined as belonging to the first category, Poland definitely to the second and the Czech Republic found itself somewhere in-between.

The sticks usually had nothing to do with coercive actions but were applied in a much more subtle way. In general they hinged on creating and exploiting certain fears and uncertainties, in particu-

lar the one of being excluded from Russian energy schemes. Even those in these countries who see over-dependence on Russia as undesirable, often support deepening relations with the dominant supplier as the sole realistic option for securing stable oil and gas deliveries. Furthermore, a likely gas shortfall in Russia makes the Central European customers even more sensitive to a possible real or perceived elimination from the list of Russia's clients. Underinvestment in upstream in Russia has been accompanied by efforts to increase export capacities by construction of Baltic and Black Sea oil and gas by-passes of Ukraine and Belarus (Nord Stream, South Stream and BTS-2), tantamount to by-passing Central Europe. Currently Russian ambitions are constrained because of a limited number of pipelines and reliance on the Central European corridor. For CEC preserving transit status is key to at least partial counterbalancing of Russian energy interests, especially for those with no serious alternatives. Needless to say, Russia is not happy with the current nature of interdependence and is interested in making it more asymmetrical, which is one of the driving forces behind projected gas and oil by-passes. In other words, it is about creating a situation in which any disruption of energy relations would be more politically and economically costly for the Russian partners than for Russia itself.

Energy Security in Central Europe: Perceptions and Responses

Energy security is perceived and handled differently in individual CEC. Diverse views not only run along national borders but intersect national political scenes as well. This applies above all to dependence on Russia. Currently, each of these countries prefers to act separately upon its own risk assessments, which often translates into incompatible strategies.

In **Poland** the energy security debate has been influenced by relatively difficult relations with Russia. Polish governments have looked at it through a strategic lens and perceived since the end of 1990s diversification away from Russian oil and gas imports as a top priority. Needless to say, the Russo-Ukrainian gas dispute fully confirmed this viewpoint. Currently, the cornerstones of Polish gas security policy are the construction of the LNG terminal in Świnoujście on the Baltic coast and the expansion of underground gas storage. Naturally, energy security is also present behind Polish support for domestic coal and carbon capture and

storage projects, as well as behind nuclear energy program which is in the planning stage.

Poland has also supported the Europeanization of energy security and opted for the EU's more robust external energy dimension. The January crisis, in Polish view, proved that a joint crisis mechanism was badly needed. After the dispute the Polish government has once again started to press for amending the EU Directive of 2004 on natural gas security of supply to change obsolete definition of "serious disruption" that makes Community-level intervention obligatory.

In the **Czech Republic** strategic thinking about security was accompanied by significant emphasis on the need for economically and politically efficient utilization of the country's transit position. In contrast to Poland, Czech efforts to diversify oil and gas suppliers were successful and considerably decreased vulnerability to external interruptions. In consequence, the energy security discourse shifted from security of supply to the regional expansion of Czech leading energy company CEZ and nuclear energy. Reduced dependence on Russia made the Czech position more relaxed and multi-dimensional. So, on the one hand, the Czech Republic looks critically at politicization of energy issues by Russia, but, on the other, it aims at boosting its transit role between Russia and Germany to insure against disruption risks. This tactic is embodied by the Gazelle project, i.e. construction of Czech system interconnector extending the southward Nord Stream extension named Opal through Czech territory to Bavaria.

It should be borne in mind that the day the crisis broke out the Czech Republic took over the EU Presidency, with energy security as one of its priorities. The Russo-Ukrainian clash forced it to react quickly but within the constraints of the performed function. The Czech response was moderated by both the Czech view of energy security and by the need to coordinate and represent diversified interests of member states. Still, the Presidency used the opportunity to give new impetus to the Nabucco project perceived as a test of the EU's capacity for energy integration. Thanks to close cooperation between the Council led by the Czech Republic, the European Commission and the European Parliament "Southern gas corridor" received financial support which prepared the ground for an inter-governmental agreement signed in July.

In totally oil and gas import-dependent Slovakia energy security usually meant preserving the role of a "highway for Russian resources" (gas in particular) as an implicit leverage and bargaining chip.

Lack of visible alternatives has encouraged the Socialist government (in power since 2006) to focus on Russia as a safeguard of security of supply. Interestingly, close relations with Gazprom were used instrumentally to exert pressure on Western companies. It was symptomatic, for instance, that the Slovak government, shortly after the January 2009 crisis, proposed establishing a joint venture between a state company and Gazprom to improve competition on the gas distribution market dominated by SPP, in which the German E.On and French GdF have a 49% stake⁴.

It is worth noting that just prior to the crisis in November 2008, Slovakia struck a 20-year deal with Gazprom on deliveries and transit. The transit volumes are to reach around one trillion cubic meters between 2009 and 2028, with the average amounting to about 50 bcm a year, that is much less than recent years' average of approximately 75 bcm. This significant reduction mirrors both Russian plans to by-pass Ukraine (meaning automatically by-passing Slovakia) by Nord and South Stream and a looming decline of Russian gas export, calling into question Gazprom's assurances that neither of the two pipelines was meant to replace the existing route.

It would be premature to conclude that the risk of reducing Slovak transit and uncertainty about stability of supplies have produced any significant policy change, but obviously they reinvigorated the debate about diversification and even resulted in some practical steps. In June the Slovak gas company SPP concluded a long-term contract with German E.On envisaging supplies of 0.5 bcm a year, and an agreement on building a gas link to Hungary was signed between SPP and MOL subsidiaries. The former aims at diversifying suppliers (even if gas bought from E.On would be of Russian origin, as in the case of Hungary), while the latter is supposed to pave the way to regional consolidation and overcoming current market segmentation. This interconnector would also create an opportunity for further diversification of gas supplies, especially if the LNG terminal in Croatia is build. So while the Slovak government is still focused on maintaining close relations with Russia to secure long-term supplies, the companies due to permanent tension between Kiev and Moscow started to introduce some modifications into their strategies to decrease risk exposure.

Hungary, which has no significant transit assets, focused on boosting its role of a regional energy hub and network interconnector. Even if over-dependence on Russia is perceived as a challenge to energy security, the absence of short-term realistic alternatives makes deeper cooperation with Gazprom both a commercial op-

⁴ However, it also means that Slovak declarations in favor of Russia should be treated carefully because they are not going to translate immediately into an actual expansion of Russian companies. In practice this has not happened yet and a lot of common projects remain on paper.

portunity and the best possible guarantee of energy security⁵. In the long run, Hungary appears to be in better position than Slovakia due to its geological condition for underground storage, recently discovered non-conventional gas deposits and prospects for becoming integral part of projected trunk pipelines.

Hungary became known for hard to follow oscillation between support for EU-prioritized Nabucco gas pipeline and its rival Russia-led South Stream. Throughout recent years statements in favor of Nabucco were mixed with criticism and open support for the Russian project. In the name of this pragmatic “wait-and-see” strategy Hungary concluded intergovernmental agreements on both South Stream and Nabucco.

Although the crisis hit the Hungarian economy, it initially did not produce any change in the policy orientation of the left-wing government. But it generated a wave of critical comments on the Russian energy experiments from the opposition. Preservation of “Russia-first” state policy was confirmed by the March 2009 Gazprom-MOL agreement on a joint venture to build an underground gas storage facility, and an agreement between Gazprom and the Hungarian Bank of Development on the construction of the Hungarian section of the South Stream.

Yet the picture became more blurred in April, after the Austrian company OMV had sold quietly its share in MOL to the Russian oil company Surgutneftegaz⁶. A legal battle is underway, but this transaction illustrated Russian aims perfectly, while revealing domestic tension in Hungary as far as energy security is concerned, with Russia not just as a part of a solution but also as a part of the problem. The Surgut-MOL case might have a more profound impact on the energy security discourse in Hungary than the Russo-Ukrainian crisis, because it clearly demonstrated how exposed this country was to external pressure, especially in a period of economic and political havoc. Surgut’s move supported by the Russian government is as a part of a broader strategy to expand control of oil and gas pipelines and processing facilities in Central Europe and to exploit the unique position of MOL, a member of the Nabucco consortium, owner of efficient refineries in Hungary and Slovakia, owner of the gas transmission system pivotal for success of any regional network integration, and a shareholder in a Croatian gas and oil company which is a member of the consortium established for LNG terminal construction on the Adriatic seaside. Interestingly enough, MOL’s defensive moves against this hostile take-over were supported by the government and opposition arguing jointly that it would pose

⁵ But to be honest, Hungary was at the same time among the countries most actively speaking for regional integration of energy infrastructure (networks and storage) as well as setting common legal and regulatory regimes (see. NETS-New Europe Transmission System initiative of MOL envisaged to integrating the network of eight Central and South-Eastern European countries).

⁶ The Russian company acquired that stake in MOL on March 29–30 from the Austrian OMV by paying double the market price. It was done just before MOL’s annual general meeting of shareholders to exercise voting rights there, and take up seats on MOL’s board of directors. Hungary’s Energy Office halted that move by declining to register Surgut’s acquisition of that stake. The Russian company had failed to answer some of the regulators’ requests for legally required information about foreign companies wishing to acquire assets in Hungary. The legal battle is underway with MOL defending itself from this hostile take-over attempt.

a threat to national security. The question is whether the legal moves that have been undertaken are sufficient to oppose potential Russian political and economic pressure⁷.

The January crisis demonstrated clearly that counting only on stable relations with the dominant supplier was not enough to ensure security, but it is unclear if this message has reached its target. A certain and not to be underestimated role in energy positioning of Central European states has been played by domestic factors and particular political constellations. Apparently, parties to the left of central-left formations are inclined to seek closer relationships with Russia, which makes them more willing to accept Russian commercial proposals. It was not just a coincidence that Slovak and Hungarian Russia-first energy policy has been most actively implemented under Socialist governments. While they often emphasize that it is pure pragmatism and realism that stands behind their action, their political opponents tend to indicate that such an approach may be somewhat a function of opaque relations inherited after the collapse of the Socialist bloc. But these two explanations, namely economic pragmatism and shadow politics, are not in contradiction, and most probably both provide valuable arguments. As a consequence, energy security perception may be a function of current and temporary political constellations and it might undergo changes along with government change, although such a change will be significantly constrained by objective factors, such as a lack of serious alternatives to diversify suppliers.

Conclusion

Several factors seem to be decisive for the energy choices that have been and will be made by Central European states: (1) vulnerability of their energy systems to disruption (real and perceived) due to over-reliance on one source and presence/absence of alternatives (or prospects for establishing alternative supply options); (2) Russian “stick and carrot” strategy or, in other words, inclusion versus exclusion policy (offering privileges in return for closer political and commercial cooperation), (3) underdeveloped EU energy security policy that makes the member states adopt a “go it alone” strategy and turn a blind eye on the interests of other EU members; and, last but not least (4) domestic political setting in Central European states. There is no clear hierarchy of the above factors. It is their specific combination that creates significant divisions within Central Europe in the field of energy.

⁷ MOL is dependent on oil from the Druzhba pipeline the future of which becomes uncertain if Russia finalizes the second section Baltic Pipeline System started this year. It is also possible, especially having in mind murky operations in Hungarian gas market, that gas issues may also be utilized to gain governmental acceptance to the transaction.

It must be emphasized that Russia will remain a dominant oil and gas supplier to Central Europe for the foreseeable future due to geographical proximity, infrastructure connections and contractual commitments, and neither new gas corridors nor LNG terminals are going to change the picture dramatically. The only way to increase Central Europe's bargaining position is to transform the region into a more unified energy entity through enhanced integration of markets, transmissions networks and storage, as well as better coordination of crisis response mechanisms, preferably with the EU as a shield and driving force.

The January gas dispute called into question the energy security strategies based solely upon strong interdependence with a dominant supplier. The total supply cut-off turned regional attention to the diversification of sources. Persisting tensions between Russia and Ukraine may create an incentive for more robust regional cooperation and EU policy in this field, as well as for acceleration of the Nabucco project, Adriatic LNG terminal and energy markets' integration. It may also lead to a certain approximation of energy policies between Central European countries, especially if European Commission's proposals of new regulations concerning security of gas supply released in July are implemented. The damage inflicted by the crisis has already become a source of domestic political power struggles and will probably be used in election campaigns expected in 2010 in Slovakia and Hungary.

Milton Friedman once wrote "Only a crisis, actual or perceived, produces real change". The January gas crisis was probably not deep enough to generate a ground-breaking change in energy security policies in Central Europe overnight, but, continuing tension between Russia and Ukraine and constant risk of recurrence, and hopefully also a successful development of the EU energy policy, might indeed initiate a process of reassessing energy security strategies.

SOURCES

Bösze, Barbara, Security of Energy Supply in Hungary, Regio Minorities, Politics, Society English Edition, issue 1 / 2006

Central and Eastern European Natural Gas Outlook 2008, Report of KPMG in Hungary, www.kpmgglobalenergyinstitute.com

Deák, Andras, Is there a Central European Energy Market in the Making?, International Issues & Slovak Foreign Policy Affairs, Vo. XVIII, No. 1/2009

Energy Policy of Poland until 2030, Ministry of Economy, Draft of March 2009, www.mg.gov.pl

Energy Security Strategy of the Slovak Republic, Ministry of Economy of the Slovak Republic, October 2008, www.economy.gov.sk

Eurasia Daily Monitor 2008/2009, Jamestown Foundation (numerous analyses of

- Central European energy matters), www.jamestown.org
- Hirman, Karel, The Energy Security of the SR in the Context of the EU and Relations with Russia, *International Issues & Slovak Foreign Policy Affairs*, Vo. XVIII, No. 1/2009
- Jesień, Leszek, Conditions for the European Union's External Energy Policy. Energy Security Ex Post or Ex Ante? [in:] Leszek Jesień (Ed.), *European Union Policies in the Making*, Tischner European University, Kraków 2008
- Kupchinsky, Roman, *Gazprom's European Web*, Jamestown Foundation, February 2009
- Miller, Ryan R., *Central Europe's Energy Security Schism*, Center for European Policy Analysis, Washington DC, July 2008.
- State Energy Policy of the Czech Republic, Ministry of Trade and Industry, March 2004, www.mpo.cz
- Wyciszkievicz, Ernest, "One for All – All for One" – The Polish Perspective on External European Energy, *Foreign Policy in Dialogue*, Volume 8, Issue 20.
- Wyciszkievicz, Ernest, Polish Perspective on the EU's Energy Policy and the Security of External Supply, *International Issues & Slovak Foreign Policy Affairs*, Vo. XVIII, No. 1/2009
- Companies' websites: www.gazprom.ru, www.mol.hu, www.spp.sk, www.pgnig.pl, www.transneft.ru.