THE LIBERAL APPROACH TOWARDS ENERGY SECURITY THROUGH INTERDEPENDENCE AT RISK

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Energy security basics are nowadays at stake, after the Ukrainian crisis. Technical support is requested in order to solve the most pressing issues related to the flow of energy to import dependent states. The issue deserves a revision of the intelligent grids and reverse flow systems in Europe and new technical solutions should be envisaged. The most important and pressing issue is time, since all investments in energy are requiring heavy political support and strong economic solutions. Time is of essence when the technical side is at stake to find intelligent, flexible and quick solutions for the transfer of relevant quantities of energy via new types of mediums and ad hoc grids.

Keywords: energy security, technical innovations, third generation transport of energy, smart grids, adaptative systems

1. Energy security: two solutions, two theoretical approaches

The original form of energy security discussed at the level of any theoretical approach is related to the energy intensity of the economy - the quantity of energy per value of the production or for income in taxes for the GDP, energy saving, energy efficiency, better technologies for a higher rate for the efficiency of the production[2] and a better rating for transportation of this energy. In this case energy should produce fewer losses in the process, at higher distances and lower level of energy consumption for this transportation on long distances of the energy[3]. Following, the EU proposed green energy proportion, environment friendly technologies, ecological sources of energy (natural, if possible), interconnection for a flexible market in energy products, all being part of the common energy market rules, or the third package[4].

When it was up to the energy products that need dedicated infrastructure for the transportation[5], two were the solutions: first interdependence, second alternative

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[2] *Energy 2020 – A strategy for competitive, sustainable and secure energy*, http://ec.europa.eu/energy/energy2020/energy2020_en.htm.

[3] *How to Strengthen Energy Security of Ukraine and Europe?,* Policy paper, Open Ukraine, Kyiv, 2009.

[4] *Energising Europe: A real market with secure supply*, Brussels, 19 September 2007, IP-07-1261, http://ec.europa.eu/energy/gas_electricity/legislation/legislation_en.htm.

[5] There is a direct difference between oil and gas. While oil is a merchandise that could be transported without dedicated infrastructure – tankers, trains, trucks –gas is dependent on pipelines. It is true on the other hand, that sending oil via pipelines is far cheeper than via any other type of transportation. Hoever, at longer distances, pipeline transport can become as expensive as transport by ships. In the case of gas and LNG, 80% of the gas is coming via dedicated pipelines in the EU (see Mike Orcutt, "The US Can't Really Undermine Russia by Exporting Gas", in *MIT Technology Review*, 18.03.2014).

sources and alternative routes[6]. Interdependence is a liberal approach,[7] which states that security is higher when all the terms of a chain are part of the whole process. In other words, if the producer and the consumer are co-owners of the others part in the chain, meaning that the producer has shares in the downstream and distribution companies of the consumer country and the consumer has shares in the upstream, in the producer company, then this interdependence will ensure that the chain is indestructible, since there's a common interest in each part of the chain[8].

This first solution comes from the conjecture[9] (meaning a rule that has never been proven, but neither the contrary, so it is accepted as true) that the interdependence and a higher number of relations between two countries is forging a situation where conflict is far less possible[10]. Conjecture also refers to the democratic paradigm[11] that democratic countries are not fighting each other since they have other means to deal with their differences. Hence, the Liberal approach to the world states that interdependence is a solution for security[12], and we are all inclined to say that this is a reality.

Fact is that the first difference between the theoretical approach and the reality is that we do not only have producers and consumers of energy, but there is a third factor, the transit countries. Moreover, there is no such thing as a pure producer country or a pure consumer country or a transit country. In reality, Russia itself has regions where it acts with an exchange of energy products, since it is far easier

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[6] Iulian Chifu, Adriana Sauliuc, Bogdan Nedea, *Energy Security in the Wider Black Sea Region*, Curtea Veche Publishing House, Bucharest, 2010.

[7] Scott Burchill, "Liberalismul" in Scott Burchill, Richard Devetak, Jacqui True, *Teorii ale relaţiilor internationale*, translated by Ruxandra Ivan, European Institute, Iaşi, 2008; Immanuel Kant, *Spre pacea eternă – un proiect filosofic*, All Publishing House, Bucharest, 2008; David Baldwin, "Neoliberalism, Neorealism and World Politics" in David Baldwin (ed.), *Neorealism and Neoliberalism: The Contemporary Debate*, Columbia University Press, Columbia, 1993; Robert Keohane and Joseph Nye, *Putere şi interdependenţă*, Polirom Publishing House, Iaşi, 2009.

[8] Iulian Chifu, Adriana Sauliuc, Bogdan Nedea, *Energy strategies in the wider black sea region*, Second Edition, ISPRI Publishing House, Bucharest, 2011.

[9] A conjecture is a proposition that is unproven. Karl Popper pioneered the use of the term "conjecture" in scientific philosophy (see Popper Karl, *Conjectures and refutations: the growth of scientific knowledge*, London: Routledge, 2004. Conjecture is contrasted by hypothesis (hence *theory, axiom, principle*), which is a testable statement based on accepted grounds. In mathematics, a conjecture is an unproven proposition that appears correct. See Schwartz JL, *Shuttling between the particular and the general: reflections on the role of conjecture and hypothesis in the generation of knowledge in science and mathematics*, Oxford University Press, 1995.

[10] Mircea Malița, *Zece mii de culturi, o singura civilizatie spre geomodernitatea secolului XXI,* Nemira Publishing House, Bucharest, 1998.

[11] Erik Gartzke, "Kant We All Just get Along? Opportunity, Willingness, and the Origins of the Democratic Peace" in *American Journal of Political Science*, vol. 42, nr.1 (january) 1998.

[12] Robert Keohane and Joseph Nye, *Op.cit.*

to use energy from Kazakhstan, for instance, for heating some southern regions, than to furnish it from long distances inside the Russian Federation. Also, it is far easier for Kazakhstan to get energy from Russia nearby than to transit it through the Kazakh steppe or desert.

The transit countries are a specific and important topic of the chain in energy infrastructure dependent products, meaning that there are some countries that can forge their strategic weight due to their status of transit countries. It is the case of Turkey, a hub country for European energy, and of Ukraine, since a higher percentage of oil and gas coming from Russia gests into Europe via pipelines running through those countries. But once again, those countries are not purely transit countries, they are also net consumer countries, and that characteristic can alter the theory of energy security via interdependence.

The second approach to energy security in energy products that are depending on dedicated infrastructures is known as alternative sources and alternative routes[13]. It is a more of a realist/neo-realist approach. The assumption is that the international actors are inclined to get more power and that energy is a part of the security of a country, according to Barry Buzan and the School of Copenhagen on European security[14]. In this approach, it is good to have alternatives for avoiding that one of the providers of your energy tries to take advantage of that dependency and using it for political purposes or for economic advantages from its posture of relative monopoly.

This approach is also reflected on the European level in the rules of competition on the market. Moreover, it has strong roots in the rules of the WTO and those of the Bretton Woods[15] agreements. The rules embedded in the competition rules at the EU level are the ones that rather refer to this realist approach. This means that, for ensuring that your energy is floating and you have your hands free in international and domestic policies, it's better to have alternatives in terms of sources and routes. This approach also introduces the third term in the equation of energy security, meaning transportation countries.

Now, those competitive approaches to energy security are the reflection of clear positions of some of the EU member states. Unsurprisingly Central and Easter

[13] Iulian Chifu, Oazu Nantoi, Oleksandr Sushko, *The Russian-Ukrainian Gas Crisis*, Institute for Euro-Atlantic Cooperation, Kyiv, 2010; see also Iulian Chifu, Adriana Sauliuc, Bogdan Nedea, *Energy Security*……

[14] Barry Buzan, *Popoarele, Statele şi Teama*, Cartier Publishing House, Chisinau, 1991.

[15] The Bretton Woods Conference, formally known as the United Nations Monetary and Financial Conference, was the gathering of 730 delegates from all 44 Allied nations at the Mount Washington Hotel, situated in Bretton Woods, New Hampshire, United States, to regulate the international monetary and financial order after the conclusion of World War II. The conference was held from the 1st to 22nd of July, 1944. Agreements were executed that later established the International Bank for Reconstruction and Development (IBRD, which is part of today's World Bank Group) and the International Monetary Fund (IMF).

European countries, dependent on the single sources of supplies in gas coming from the Russian Federation[16], are embracing the energy security definition in terms of alternative routes, alternative sources of energy[17], solving the dependence on a certain producer country, as well as the dependence from a certain transit country. This is not coming as a surprise since there are many Europeans from this region have experiences concerning the cut of gas, artificial raise of the price or political conditionality for energy/gas supplies from the producer country.
There is the experience of the 2006/2007 first Ukrainian gas crisis, with the cut of supplies by Russia after a dispute regarding the debts of Ukraine on their own consumption of gas, as it was the case once again in the 2008/2009 Ukrainian gas crisis[18]. The contracts are made every year and those disputes are solved the hard way in the winter time, when an extra pressure is put on the third part, meaning that European consumers that are paying for their gas in due time, according to each other's contract.

These different approaches to energy security are not designed only for theoretical debates; they also have impact on the practical approach to concrete gas crisis. Moreover, they are at the origin of each project supported by the EU.
It was the case of the Nabucco project[19], a purely realist approach to security to grant alternative sources of gas and alternative routes to the specific countries dependent of only one energy supplier, Gazprom. This project was supported half voiced by the EU, and was replaced by a far weaker solution that places gas in Southern Europe in Italy[20], a country already fully integrated in the European market. This project maintains under pressure the most dependent countries in Central and Eastern Europe and in the Western Balkans. Moreover, competition to the Nabucco project, the Russian South Stream[21], is still possible. The project is

[16] The level of dependence could be found in www.naturalgaseurope.com/16.01.2014
[17] Bruegel – Michele Peruzzi, Erik Dale, Georg Zechmann, *Interactive Chart: How Europe Can Replace Russian Gas*, 24.03.2014, http://www.bruegel.org/nc/blog/detail/article/1286-interactive-chart-how-europe-can-replace-russian-gas/.
[18] Iulian Chifu, Oazu Nantoi, Oleksandr Sushko, *The Russian-Ukrainian Gas …..*
[19] The Nabucco pipeline, than reduced at the level of the Nabucco -West pipeline (also referred to as the Turkey–Austria gas pipeline) is a proposed natural gas pipeline originary from Baku to Baumgarten in Austria, that from the Turkish-Bulgarian border to Austria. The later is a modification of the original Nabucco Pipeline project, which was to run from Erzurum in Turkey to Baumgarten an der March in Austria. The aim of the Nabucco pipeline is to diversify the natural gas suppliers and delivery routes for Europe, thus reducing European dependence on Russian energy.
[20] The Trans Adriatic Pipeline (TAP) transports natural gas from the giant Shah Deniz II field in Azerbaijan, via Greece and Albania, and across the Adriatic Sea to Southern Italy, and further to Western Europe. It has been a rival of the Nabucco West Pipeline, running to Baumgarten in Austria and supplying the Central Eastern European states and the Balkan State, but in September 2013 the Shah Deniz II consortium decided for the TAP.
[21] South Stream is a planned gas pipeline to transport Russian natural gas through the Black Sea to Bulgaria and further to Greece, Italy and Austria. The project is seen as rival to the planned

designed to enforce the dependence on Russian gas and transit controlled by the producer company Gazprom,. Those European policies and their impact on different countries are the result of the background and theoretical approach of each EU member country to energy security and, surely, to particular interests of the industries and energy giants in each of those countries.

Romania, on its own, has always supported the realist approach to energy security, meaning alternative sources and alternative routes. The Southern corridor was considered as important for Europe itself as for the road travel to Baumgarten, the heart of European gas, meaning that countries from Eastern and central Eastern Europe, heavily dependent on an unique source of gas were important to be transited by a pipeline and to benefit from quantities of gas coming from Azerbaijan, Caspian Sea or Central Asia. And that's why Romania supported the full fledged Nabucco rather than Nabucco West as a TAP prolongation to Europe: this was the only solution that fit those commitments.
Meanwhile, Romania has a low level of dependency from Russia, less than 20% - easily covered by internal sources or conversion to coal for thermal power stations. And the interconnections are on the move with Bulgaria and Hungary, as well as with the Republic of Moldova, and exports could begin at any moment, even though more investments are on the way. Romania has also two interconnections with Ukraine, but without a reverse flow, so it is not able to supply Ukraine with gas.

Romania embraced the **energy security** concept – enough gas at affordable prices. Defined in that way, it means alternative sources and alternative routes for a competitive market of gas. At the same time, Romania afforded to introduce and defend the concept of **energy independence**, since it has discovered huge quantities of gas in the economic exclusive zone in the Black Sea, after the Hague trial with Ukraine, and moved to explore and exploit shale gas, as well. That's why these findings could offer from 2020 on energy independence to Romania, which could become a net exporter of gas, at the same time not being dependent on imports of gas.

2. Georgia, a vivid example of security through interdependence

The idea of security through interdependence is not a bad one. We do have countries that are fully ensuring their security through this idea of granting as much as interdependence as possible to the actor in their neighbourhood. In that respect, we need here to present the example of Georgia.
Some years ago, in the Center for Conflict Prevention and Early Warning, we have developed a project on energy security in the Wider Black Sea Region[22],

Nabucco pipeline, which was ultimately abandoned after Azerbaijan opted for the Trans Adriatic Pipeline.
[22] Iulian Chifu, Adriana Sauliuc, Bogdan Nedea, *Energy Security*...

trying to look at the possibility of all the nine countries in the region to cope with the most probable four crisis that could happen in the region: the cut of supplies, the sudden raise in supplies prices, a sustainable raise of the prices and the cut of foreign and direct investments. The project requested visits on the ground and interviews with local actors, as well as thorough studies on the system of supplies and transportation and on dependencies. The most striking result was the discovery that a country like Georgia, at war with Russia, who completely changed its dependence on energy products from Russia to Azerbaijan (the most visible and aggressive country in terms of denouncing the pressure of its northern neighbour), was the one taking advantage of its security from the geopolitical situation and the interdependence between producers and consumers that were using its territory for transportation.

In fact, since Armenia was isolated due to the cold war with Azerbaijan in Nagorno Karabakh and the disputes with Turkey regarding the so-called genocide of the Armenians in 1915, and if we add the isolation of an Iran under embargo for its nuclear ambitions, the only source of gas for Armenia is the one from Russia via Georgia. At the same time, the Southern Corridor that grants the transit of the Azeri oil and gas to Europe was through Georgia, then via Turkey to Europe. In that context, there was to be found a complete interdependence that made Georgia a knot worth being maintained. Its security came from the supplies of gas from Russia – as a price for the transit to Armenia – and from Azerbaijan - as a price for the transit to the EU.

But Georgia's position involves a *status quo*, a situation that could be challenged by all the four countries involved. If Armenia gets more gas from Iran, at some stage, this increases its independence from Russia but exposes Georgia's independence in energy. It also exposes Georgia to more political pressure from Russia[23]. On the other hand, if Georgia is at risk and there is a pressure to move and control the East-West transit route in Georgia – it is the case near Gori, where Russia occupied and recognized South Ossetia after the Georgian war in 2008 –, then the alternative route from Azerbaijan for Europe is at risk to become controlled by Russia, its second supplier[24], and for Russia to re-establish its monopoly and control of the supply routes for the EU countries.

However, if those situations are showing the vulnerability and instability of security though interdependence in Georgia's case, there are far more important problems related to security through interdependence, as has the recent Ukrainian

[23] Iulian Chifu, Adriana Sauliuc, Bogdan Nedea, *Energy strategies...*

[24] Iulian Chifu, Oazu Nantoi, Oleksandr Sushko, *The Russian-Georgian War. A cognitive intitutional approach of the crisis decisionmaking*, Curtea Veche Publishing House, Bucharest, 2009; Iulian Chifu, Monica Oproiu, Narciz Bălăşoiu, *Războiul ruso-georgian. Reacţiile decidenţilor în criză*, Curtea Veche Publishing House, Bucharest, 2010.

crises revealed[25]. The cause is represented by the means used by the EU and the US in order to tackle the actor that exists through the rules of the international law and international system.

In fact, the annexation of Crimea by Russia is the first change of the borders in Europe after the Second World War. This infringes all the rules of the 1945 peace agreements, the founding act of the UN, the CSCE Helsinki agreements in 1975, the Paris Charter for the New Europe and the founding documents of the NATO-Russia Charter in Rome, 1997. All those international rules are making the stability of the borders in Europe – in the OSCE region – resistant to any brutal or violent change and are rejecting any change of the borders without explicit agreements of the countries – the fall of the Soviet Union in 1991, the separation of Czechoslovakia in 1993 or the agreements of the new border after the fall of Yugoslavia, in the aftermath of the Balkan wars.

The same Liberal approach to security, in the broader understanding of the concept, meaning the interdependence as a solution grants for the European states a stable period of peace if the economical and energy interdependence and all other type of engagements between Russia and the West are active and present on the table. It was a good approach at the beginning, but it did not respond to a different question: how could the international community deal with a country that begins in spite of the interdependencies, to infringe the international rules, invading its neighbours and putting pressure to the very countries which whom it is interdependent.

When taking decisions related to economic sanctions, another solution offered by the Liberal approach for avoiding military response, violence is to replace it with sanctions and military deterrence. In this case reality showed that the interdependence is so high, that any sanction against such a country becomes a sanction towards yourself. This implies a high support in each country from the big companies, the industrial lobby and the population as well. Hence the side effect of this approach of security through interdependence is that at a certain moment, when they had to react, EU countries lost their tools and leverages to constrain the system's maverick to return to the internationally accepted rules. This is a fact that, if assumed, means the failure of the interdependence solution for security and the dramatic change of the approach to realist ones. Hence this would mean a return to the same logic of power, where each country is counting its own interests more attentively than before, giving up to the thought that we are either at the "end of history"[26], or in a post-modern world[27].

[25] The annexation of Crimea was followed, as a consequence, by harsh economic sanctions by the EU and the US. With this occasion, EU countries proved to be so connected to the Russian market or source of energy supplies that any such sanction is directly harming the EU economy as well.

[26] Francis Fukuyama, *The End of History and the Last Man,* Free Press, 1992.

These are the real lessons learnt from the approach of security through interdependence. These new discoveries are game changers for the whole approach to military power, investment in deterrence and military updated technologies as the consequent changes in the world politics: foreign affairs, defence, globalisation, power politics, alliance strategies, and so on. Because we've built the system of interdependences in Europe without a way out, the key for changing this reality in a dramatic situation, when constraints are needed, is blocked in this condition of deep interdependency.

3. The technical problem formulated: Republic of Moldova case study

I believe that energy security is also about research and technology, about the responsibility to find ways and solve the biggest problems that energy security is posing to politicians in the laboratories of research and through the new technologies tested. Let's take the case of Republic of Moldova or this purpose and its problems to be solved through new discoveries.

What is the real problem of the energy security in Republic of Moldova? First, it is the lack of internal resources or their existence in the separatist region of Transnistria. Transnistria also is the biggest consumers, through the industry situated there. Then there is a possible alternative through interconnection with Romania, on gas and electric energy. The impediments to this alternative are coming partially from the difference in gas pressure between the countries. Also there is a difference in the quality and frequency of the electric power in the two countries – Romania according to the European norms, Republic of Moldova subject to the former USSR system. Finally, there is the land-locked situation of Republic of Moldova, which prevents it from having alternative solutions for energy procurement.

This leads us to two categories of problems to be solved: some general for energy transportation, some dedicated to the very situation of Republic of Moldova. In the first category, we have the transportation of energy in another form than wires and infrastructure of high frequency, storage of electric power, new batteries, industrial batteries and generators. On gas, we have the same situation of general problems, solved for now through LNG, but difficult to be brought to the Republic of Moldova, due to its land-locked situation. Also there is the problem of access to the Danube, possible only in the region of the Black Sea that is subject to the security situation in the straight of Bosporus, where LNG tankers cannot enter, as the explosion of such a transport could lead to the full destruction of Istanbul and its 14 million inhabitants.

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[27] Paulin Marie Rosenau, *Post Modernism and the Social Sciences: Insights, Inroads and Intrusions*, Princetown, 1992; Joshua S Golldstein, Jon C. Pevehouse, *Relații Internaționale*, Polirom Publishing House, 2008.

Moving to this second track, the concrete situation in the Republic of Moldova, we have to also consider the fact that the national distributor, Moldovagaz, is majority owned by Gazprom, the producer and transporter of energy in the post-Soviet space. This raises both technical and legal problems for the gas interconnection which is being built under the Prut River.

First, the difference of pressure on the gas is affecting the quantity of gas that could be transported. Thus, only a tenth of the quantity needed and in the Republic Moldova could be sent after the connection is made. The project needs a second stage, with a pumping station in Romania having to grant the capacity of pushing the needed quantity of gas into the pipelines. Thirdly, another phase is needed in order to make the dedicated pipeline that should arrive from Ungheni, on the other side of the border, to Chisinau, in the capital, in order to enter the system and arrive to the big consumers.

The problem of a dedicated pipeline is a juridical one, since the system of transportation belongs to Moldovagaz and its major shareholder, Gazprom is the competitor that will be the first to loose if the alternative source and route is in place. So, if there is a crisis and the supplies are cut, the government of the Republic of Moldova can use the *force majeure* in order to oblige a company registered in Chisinau, such as Moldovagaz, to grant the transportation of the gas coming from a different source than Russia. However, this situation is not helping, once it's about the normal day by day consumption needed from this source.

That's why the interconnection needs a dedicated pipeline to the heart of the gas system in the Republic of Moldova, granting access of the big consumers in the country. It is also about a good contract that would grant that the interconnector is owned by the two countries and avoid any privatization, taking into account the rules of the competition in the EU.

The conclusion of this evaluation is that research and new technology can offer solutions to the politicians and strategists, and that research in energy fields, solutions to the big questions and innovation could offer a way out of the security dilemma in energy security terms. This is not about cutting Russians supplies, but building an alternative to the existing unique source and route for supplies in Republic of Moldova.

Also, this is the easy part of the issue of the energy security in the countries of the Eastern Partnership, at the borders of EU and NATO. In the case of Ukraine, things are far more complicated and could be put at risk in short time, with a request for a solution over night for a country that consumes some 50 billion cubic meters of gas per year. Half of this consumption comes from the internal production, meaning that the quantity needed from imports is 50 times higher than the needed quantities in the Republic of Moldova main land, (without the consumption in the separatist Transnistria region).

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