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ESSAY

TWO-SPEED ENERGY UNION – PROSPECTS OF DIFFERENTIATED EU ENERGY POLICY COOPERATION AND THE PERSPECTIVE OF THE VISEGRAD GROUP

Farkas Attila

ABSTRACT

Regionalising the implementation of EU energy policy legislation and strategy building is an important tool of the Energy Union in pursuing its goals, but empowering regions might meet with the resurfacing discussion on differentiated cooperation. The paper outlines the recent developments of the Energy Union and the energy cooperation of the Visegrad Group – one of the main regional initiatives in energy cooperation. The paper presents the energy policy issues the Energy Union and the Visegrad cooperation faces, and outlines two scenarios of potential differentiated cooperation as a reaction to those issues. It finds, that such complex regional differentiated cooperation mechanisms might face challenges possibly preventing them to occur.

INTRODUCTION

As the European Union celebrated the 60th anniversary of the Treaty of Rome on March 25, overshadowed by Brexit, the discussion on the future of the block have gained momentum again. Jean-Claude Juncker, president of the European Commission, presented his white paper on the subject on the 1st of March, as well as the European Council adopted the Rome Declaration on the 25th of March 2017. The white paper outlined five scenarios for the way forward for the EU27. The scenarios range from reduced to increased integration, and one (Scenario 3: "Those Who Want More Do More") is based on the concept of multi-speed Europe (European Commission 2017). The Declaration of Rome also includes the following phrasing: "We will act together, at different paces and intensity where necessary, while moving in the same direction […]" (emphasis added) (European Council 2017).

The idea of allowing two or more tiers to form within the EU based on the Members' different readiness for integration is not new, yet official communication has tended to avoid it until recently. The very idea of drawing a line of division between Member States based on 'how much Europe' they want and accept tends to provoke powerful political reactions.

Not on political but on policy level, however, such division is not only possible but also existing. The legal possibility of forming "Enhanced Cooperation" within a group of Member States was presented in 1997 the Treaty of Amsterdam, and the Schengen Area or the Eurozone also do not include every EU Member, although based on a different legal framework. The scenario, mentioned above, is also envisages forming such coalitions of the willing in specific [policy] areas.

Energy policy could be one key policy area for such an emerging, coalition-based cooperation. The Treaty of Lisbon in 2007 created the

basis for sharing competences in the sphere of energy policy. Since then the creation of the internal energy market has accelerated, and many other aspects of energy policy witnessed more cooperation or at least coordination on the EU-level. Yet, still significant differences remain both in capabilities and policy directions between Members. These differences will likely become more and more significant as the EU is undergoing an energy transition to a low-carbon economy.

While some basic goals and directions are accepted EU-wide, there are numerous conflicts between Member States and/or the European Commission on the tools, speed and ways of achieving them. Such disagreements could leave several like-minded Member States wanting to enhance their level of cooperation, or on the contrary, restricting their participation but allowing others to move forward.

The Visegrad Group usually shares similar or identical position on EU energy policies. Their similar economic and historical predicament, their focus on energy security and the involvement of the state in the energy sector provide a rather solid differentiation within the EU. Many of those aspects are shared with other Member States joined in or after 2004. Yet the cooperation on energy issues among the Visegrad Countries has strong roots; it is one of the most important and active policy-level cooperation within the V4 Group.

The current essay is a preliminary investigation into the question: whether and how could the EU integration in energy policy become multi-speed. The essay explores both the legal and political framework of differentiated cooperation and the evolution of energy policy within the EU and the Visegrad format during the recent years. It shows how regionalisation became an increasingly important aspect of the EU energy policy and how can this process be traced in case of the V4. It concludes by identifying the divisive lines in EU energy policy where

differentiated cooperation might occur and proposes two illustrative case studies.

POLITICAL AND LEGAL FRAMEWORK OF DIFFERENTIATED COOPERATION

A number of concepts are dealing with how differentiated integration can play out on a political, theoretical level (for an overview see (Holzinger and Schimmelfennig 2012)). As mentioned, there are several policy areas where not all EU Member States participate at all, or if yes, certain parts of the *acquis commununautaire* are not applicable in their case. Up until now it is more common to have 'negative' differentiated cooperation, i.e. certain Member States not participating (opting-out) in a, by design, EU-wide cooperation, like Schengen or the Eurozone. 'Constructive' differentiated cooperation, where by the original design the pro-integration Member States do not aim for full participation, has happened in only few cases yet.

The legal framework for differentiated cooperation can take several, but not necessarily clearly distinguishable forms as "in reality the boundaries between several categories are often quite fuzzy" (Blockmans 2014, 5). The tool of Enhanced Cooperation has been introduced in the Treaty of Amsterdam and is designed to allow a group of Member States to pursue further integration. It is regulated by Title IV of the Treaty on European Union, and Part Six, Title III of the Treaty on the Functioning of the European Union. The Treaties do not specify the scope of the Enhanced Cooperation, i.e. do not limit how many policy areas or what depth of additional integration is allowed. They specify, however, a set of rules to be followed:

– Enhanced Cooperation shall aim to further the objectives and interest of the EU. It shall not undermine the internal market or

economic, social and territorial cohesion. It shall not constitute a trade barrier inside the EU nor distort intra-block competition.

- Enhanced Cooperation is only possible in the non-exclusive competences[1] of the EU. It can be formed only as 'last resort', if no other solution is feasible to promote integration.
- Although such cooperation would use the institutions of the EU, the legislation approved under it is not part of the *acquis*, therefore not binding for the non-participating Member States. Also the financial costs related to the implementation of the Enhanced Cooperation are to be covered by its participants only, and not by the EU budget.
- A minimum of 9 Member States are required, but the initiative needs to be open for every Member. The initiative basically needs to be approved by the Commission, the Parliament (except for CFSP) and the Council (with QMV, but unanimously in case of CFSP).

There are only few examples of Enhanced Cooperation (e.g. divorce law and patent law, proposals for a financial transaction tax and an EU public prosecutor office as the most recent initiative), yet no such framework has emerged or have been negotiated yet in energy policy. Since energy (and the closely related environmental) policy is shared competence, there is no direct legal obstacle of forming Enhanced Cooperation in common energy policy. However, the creation of competition rules for the internal market is an exclusive competence of the EU, and creating the internal energy market is the main objective of the common energy policy. Therefore this might be limiting the areas where Enhanced Cooperation would be possible to form (López-Ibor Mayor 2009).

It has also been argued, that no Enhanced Cooperation could be formed on topics falling out of the general competences of the EU either (ClientEarth 2010). Even if certain Member States come to agreement on – with an extreme example – banning nuclear power production in their own countries, they could not use the Enhanced Cooperation format, as Treaties do not empower the EU with deciding on such issues in general.

Should the Treaties be amended and new policy powers granted on EU level, differentiated cooperation can take a different approach: allowing not for additional cooperation but not taking part in the new EU policy for Member States with permanent opt-outs or temporary derogations. If new policy areas would be added or extended, certain Member States cold allow for further integration by pulling out from them by the unanimous agreement of all Member States. Based on the current practice[2] it is less likely, however, that a significant group of Member States (e.g. the whole Visegrad Group) would be granted such an exemption. This attitude could however change, should the current discussion on differentiated cooperation gain momentum and such approaches would prevail.

A third, but somewhat outlier option is to form an alternative framework of cooperation outside the European Union, as an international agreement. The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union aka the Fiscal Stability Treaty is a prime example. The Treaty was signed in 2012 by all but two Member States. It is completely built upon the monetary policy framework of the EU, yet is not part of the *acquis*. Similar agreements could be possible in the scope of energy policy as well.

THE EVOLUTION OF ENERGY POLICY COOPERATION IN THE EU AND THE V4

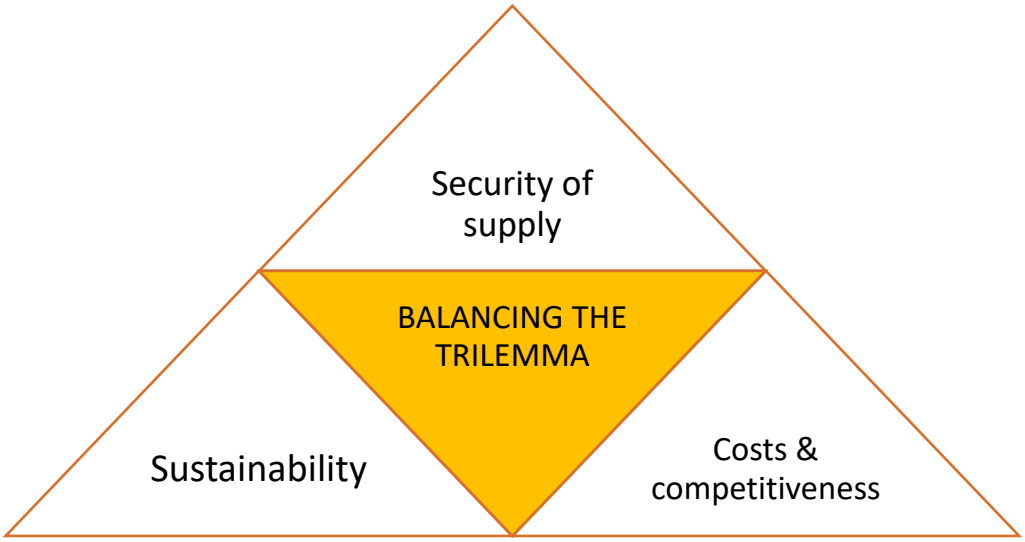
EUROPEAN UNION – BIRTH OF THE ENERGY UNION

Energy policy is shared competence between Member States and the EU, and the exact distribution of responsibilities is defined by Article 194 of the TFEU[3]. The Article defines four areas of EU to which the common policy should aim for:

- "ensure the functioning of the energy market;
- ensure security of energy supply in the Union;
- promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
- promote the interconnection of energy networks."

These are the results of long development with gradual widening of EU coordinated areas and budgets. One aspect has not changed, however: the complete sovereignty of Member States over shaping their energy mix (with what sources and with which technologies they produce energy)[4].

The areas of the common energy policy, recreate the well-known energy trilemma. The term was coined by the World Energy Council and refers to the three basic requirements of a modern energy system (from the perspective of the consumer): 1. Security of supply or sometimes vaguely referred to as energy security. 2. Affordability of using energy through competitive market structures. 3. Environmental sustainability of the energy system (localised pollution, GHG-emissions).



Ever since the Treaty of Rome, the central aim of the European integration was to create an internal energy market. At first the liberalisation of the national energy markets was propagated by the Commission (see the Second Energy Package in 2003), and as a next step to open up competition between national markets by supporting physical and legal interconnection of electricity and gas markets (Newbery et al. 2013). This process is currently still under way based on the Third Energy Package adopted in 2009, the market design rules adopted continuously and most recently a new set of proposed legislation as Winter Package in December 2016.

The internal energy market should have been finalised by now according to the original schedule in 2014, yet significant efforts are still needed especially in terms of physical interconnections. Partially as a response to governments' and companies' inactivity, the EU has developed its own support schemes and funds, but important, multi-billion € investments in electrical transmission networks and gas interconnectors are still missing (Sartori and Colantoni 2015).

Energy security and the climate agenda (sustainability) are later additions and are more contested policy areas as they are more

politicised than the creation of the internal energy market. In 2007 the Commission puts forward the 2020 goals and the Renewable Energy Directive containing legally binding targets for Member States. As the EU and several of its Member States aimed for a leading role in global climate action in the late 2000s, sustainability became an increasingly integral part of the common energy policy framework. Following the gas supply crises of 2006 and 2009 the issue of gas supply and transit was securitised both by Member States and the Commission (Maltby 2013). The disruption of Russian gas supplies and Ukrainian transit in early 2006 and 2009 due to political conflicts have highlighted the dependency of many (new) Member States on Russian natural gas shipped through Ukraine. The events created a window of opportunity to frame the supply security question as a common EU issue both by several Member States and the Commission. As a result the Security of Gas Supply Regulation was accepted in 2010 establishing an EU security of supply framework.

In terms of legal background the Lisbon Treaty is still the most defining step in the evolution of the EU energy policy. In political terms, however, the creation of the Energy Union could become of similar significance. The years 2007-2010 have witnessed major legislative advance in the internal energy market (3rd Energy Package), sustainability (RED and 2020 framework) and security of supply (SoS regulation) – all based on Article 194. Yet the Energy Union concept constitutes the idea of balancing the three different aspects and forming a truly single European energy policy.

The concept of Energy Union was developed in several stages. The original idea (under the name of Energy Community[5]) proposed by Jacques Delors et al. in their essay of 2010[6]. The word Energy Union was coined several years later by Donald Tusk (then Polish Prime

Minister), who in an influential[7] essay called for an Energy Union solely for countering the Russian dependency and forming a united block of gas consumers (Tusk 2014).

The Energy Union as an idea was eventually institutionalised by Jean-Claude Juncker, as he listed it as one of his five priorities as the candidate for the Presidency of the European Commission in 2014. His initial, brief proposal put competitiveness, diversification and economic interest in focus. Later these expanded into the five dimensions of the Energy Union, endorsed by the European Council on March 19 2015:

- Diversification, energy security and solidarity between Member States.
- A fully integrated energy market without technical (infrastructural) or regulatory barriers.
- Energy efficiency for security and prosperity.
- Emission reduction and global leading role in renewables.
- Supporting research and innovation to drive the energy transition.

The plan partially integrates the ideas of the Delors and Tusk plans, but the concept of energy transition is more deeply rooted in its core. The Energy Union framework itself did not bring new elements to the legal environment of EU energy policy and neither did it introduce new targets or significant new governance structures, and was received as "being a list of all the things the Commission is currently doing, with some extra 'asks'" (Helm 2015, 4). The Energy Union was, however, a useful political instrument: the Commission was able to pursue the Europeanization of a key sector while in many other areas the unity of the EU suffered blows (e.g. Brexit, Eurozone, migration

quotas), and the development of the common energy policy is favoured by the EU citizens as well (Keay and Buchan 2015).

The framework did more than creating a political tool as it put a "fundamental transformation" of the EU energy system as a core and inevitable need and therefore a strategic vision and an umbrella for the previously fragmented EU energy policy. The current energy transition is one in a series of paradigmatic changes in the energy consumption and production patterns of human society[8], and it is driven by the need for decarbonisation, the extensive use of renewable energy sources, decentralisation of consumption, empowerment of consumers ('prosumers'), increasing energy efficiency and changing the business model of the centralised energy system in place. These ideas in Europe were first extensively developed under the concept of *Energiewende* in Germany following the decision of gradually but rapidly shutting down the country's nuclear power plants supposedly replacing them with renewable capacities backed up with strong federal support scheme.

The legal foundation of the Commission's work (i.e. the TFEU) has not changed however, and no extra competencies are paired with the new concept. Yet achieving an EU-led energy transition, the core idea behind Energy Union, is practically impossible without extending the competences and institutions of the European Union (Glachant 2015). To bridge this gap, the Commission pursued its work on building and fine-tuning the internal market, strengthening energy security and advancing sustainability. Such smaller steps can: 1. make the three areas of energy policy more balanced fine-tuning their relation; 2. evoke functionalist mechanisms to slowly expand the competences of the common energy policy. The following achievements have been

reached under the Energy Union framework in the last years with a rather reserved support from the Member States (Fischer 2017).

1. The financial crisis and the subsequent slow growth restrained the ambitions and the 2030 climate framework was accepted by the Council in a much less ambitious form during the last months of the Barroso Commission[9]. The Juncker Commission had to adapt to the accepted framework but also has to finalize the important governance mechanisms for the 2030 climate framework. Yet it is already apparent that likely more responsibility will rest with the Member States than in the case of the 2020 framework (Fischer 2017). Member States would not work completely on their own however: their integrated climate and energy plans would be consulted not just by the Commission but neighbouring countries as well fostering a regional approach in forming national strategies.

2. The Energy Security Strategy released in 2014 by the former Commission, partially as a response to the Ukrainian conflict, was an update on the current situation (with stress tests) and a vague list of future steps needed to be taken. Under the Energy Union framework, though being one of the five dimensions, only moderate steps were taken. The sustainable energy package of early 2016 contained the ex-ante revision of intergovernmental agreements of oil and gas trade[10], accepted by the EU Council in March 2017. The package also calls for the regionalization of energy security risk assessments (Member States will need to prepare Risk Assessments, Preventive Action Plans and Emergency Plans at regional level). It also introduces a solidarity principle (prioritising protected customers). The external dimension of energy security,

i.e. "speaking with one voice" did not move forward however, as the Council Conclusions on EU Energy Diplomacy (in 2015) have not included significant new elements.

3. The evolution of the internal market under the Energy Union framework is represented mainly by the sizable Winter Package of late 2016 (Clean Energy for All Europeans). The package proposes numerous evolutionary changes in the operation of the common market still to be accepted by the European Parliament and the Council. The package focuses on the electricity market as its development is more advanced that of the gas market, and the energy transition is more disruptive in this field. Large part of the package is trying to resolve market issues caused by those disruptions: facilitate the intra-day coupling of markets; empower consumers as active participants in demand management and local electricity generation; limit the market distortion by capacity schemes of Member States; encourage cross-border cooperation in renewable support schemes; enhance regional cooperation and risk preparedness in by introducing Regional Operating Centres (Buchan and Keay 2016).

In conclusion, the Energy Union has not yet introduced significant changes in the EU energy policy (similar to the changes of the Third Energy Package or the 2020 framework). It shows, however, the Commission willingness to react to the developing energy transition in Europe. As no new competencies are rendered to the framework, the Commission mainly focuses on what it knows best: creating and shaping the common energy market and through that also the area of energy security and sustainability as well. In this development process the formal and informal role of regional cooperation between Member States will be increasingly important.

This approach builds upon the process of regional gas and electricity market integration on a more technical level, based on regional initiatives and controlled by ACER[11]. Regionalism is not new, it has been in the toolset of the common energy policy prior the Energy Union, but rather focusing on the technical development of the common market (De Jong and Egenhofer 2014). By inviting regions to participate as new, formal or informal units in strategic, policy shaping processes, the Commission not only allows functionalist mechanisms to enter into play (creating spill overs by increased cooperation). It also possibly allows for more flexibility and "openness to finding other methods for constructing a continental market – notably via multiple initiatives at regional levels with varying levels of ambition and focus." (Stang 2017, 49). This might also possibly lead to, or at least encourage discussions on, differentiated cooperation in terms of energy policy within the EU.

VISEGRAD COOPERATION – ENERGY SECURITY AND MARKETS IN THE FOCUS

Energy policy cooperation within the Visegrad framework is not the only regional energy cooperation inside the EU, but it is a unique one based on its history and because "it combines political cooperation within the V4 with energy market cooperation" (De Jong and Egenhofer 2014, 3). The energy sector and policies of V4 Member States share many similarities forming the basis of the cooperation, and also providing the reason, why the energy sector became the most prominent policy area within the Visegrad cooperation. Visegrad countries have:

- developed economies with post-socialist heritage, relatively high rate of poverty (including fuel poverty) and energy intensity;
- liberalized, developing (interconnecting) energy markets with significant state intervention (e.g. end-user price subsidies, state ownership of major assets), struggling with underinvestment in energy infrastructure;
- having a diverse energy mix (renewables and nuclear included), facing with monopolistic import dependence and energy supply security for gas;

During the history of Visegrad Group, the cooperation on the field of energy has undergone a spectacular evolution to a point where energy can be considered probably the most sophisticated sectoral cooperation within the V4 framework. Although North-South direction of infrastructure development and coordination of power sector development already appears in the founding Declaration of the Visegrad Cooperation in 1991, in terms of energy cooperation only the post-2000 era bears real significance (Törő, Butler, and Grúber 2014).

Following the EU-accession the further development of energy cooperation was characterised by solid widening and deepening at the same time. The main energy policy decisions on the European Council or Council agenda have seen a preceding V4 (or occasionally V4+) consultation providing a common position. Although less visible, such consultations were crucial in increasing the negotiating power of the V4 block and contributed to their strengthening voice and increasing decision-shaping ability in the Council on energy and climate issues (Bocquillon and Maltby 2017). The main mission was, however, to integrate and strengthen the security dimension within the EU energy policy discourse (Świątkowska 2011).

Apart from policy coordination and discussion, the major project was the creation of a common electricity and gas market in the region. The concept evolved gradually from initial information exchanges and coordination of positions envisaged by V4 presidential programs of 2003/04 and 2004/05 but the main idea remained to forego the common EU energy markets and build a regional stepping stone towards it.

Electricity interconnections were and still are more developed between the countries than gas (Kaszab et al. 2013), and the cooperation of the four TSOs[12] was already given by forming CENTREL in 1992. Day-ahead market coupling was pursued as an EU backed, ACER coordinated project, and became reality in 2012 September between the Czech Republic, Hungary and Slovakia. The day-ahead market was joined by Romania in 2014 forming the 4M project[13]. Although Poland also signed the MoU on joining the market coupling project, it has not done so yet, and is more connected to Sweden, i.e. to the North-Western coupling zone. This underlines how physical and market conditions can overrule the political boundaries of the V4 cooperation.

The development of the common V4 gas market is far more politicized, and security-focused. In terms of gas supply security, V4 countries are in varyingly vulnerable situation, but in terms of price security, all of them are heavily affected by monopolistic pricing by Gazprom (Nosko et al. 2010[14]). The Ukrainian-Russian gas crises of 2006 and 2009 as well as the political tension since the annexation of Crimea and the following ongoing disputes and uncertainty of future transit have provided a significant push, and gas supply and transport security are recurring, top priority issues ever since. As a result, gas supply security has been securitised among the V4 countries and dominated

the energy policy agenda, political discussions and external communications of the group.

Besides the political activity, the Visegrad Group proposed diversification and development of interconnectors as practical solutions for the supply security issues. The North-South gas corridor connecting the Polish LNG-terminal in Swinoujscie and the proposed Croatian LNG-terminal at Omisajl became the flagship project for the V4, since the corridor's idea first appeared in 2006. This would not only allow access to LNG for the landlocked V4 members, but would also increase cross-border capacities and therefore pooling resources in case of a crisis and increasing competition. Apart from the N-S corridor, the V4 repeatedly called for diversification of supply sources as well[15].

As a result, the gas policy cooperation became one of the most institutionalised V4 activity[16]. Despite some advancement however[17], the gas supply security situation of the V4 countries is still not resolved, not only because of missing infrastructure, but because of regulatory shortcomings, e.g. the missing harmonisation of security of supply legislation among each other (Slobodian et al. 2016).

Energy (gas supply) security remained the main common topic of V4 under the Energy Union framework as well. Partially because the original Energy Union concept (focusing almost exclusively on energy security) was proposed by Poland, and also because the conflict situation in Ukraine and the emerging cooperation, especially in gas trade, with Kyiv as well. The Energy Union framework caused (or coincided with), however, some dissent among the V4 Group: at first the Group was unable to issue a common position on the Energy Union (in March 2015), later the proposal of the Commission to change the

legality check of energy Intergovernmental Agreements to *ex ante* inquiries, and the Report on the 2015-2016 Czech presidency states that "on some issues the V4 were unable to find a common position, which only confirms the trend towards fragmentation of V4 energy cooperation" (Visegrad Group 2016; Misik 2016).

There is still widespread agreement among the Group on the importance of energy security, yet the perception of threats might have changed, partially due to the Nord Stream 2 project. Poland, Slovakia and Hungary are vocal opponents of the highly controversial and politically sensitive project, yet the Czech Republic was rather modest in opposing the project (Kalan 2016). The Turkish Stream[18] project also was able to cause frictions, as Slovakia and Hungary supported two, practically opposing projects (Eastring vs. TESLA) for transiting the Russian gas to the CEE markets, should the new pipeline be built with such capacity. There is widespread consensus in the Group on supporting nuclear energy and technological neutrality, yet possible Russian nuclear investments (especially in Hungary) could be a source for tensions. In terms of climate and environmental policies the block is clearly favouring competitiveness and safeguarding consumers over a German-style *Energiewende*, but Poland's decreasing openness for implementing green policies might also hinder a common approach in those areas.

Despite any potential disagreements between the Members, the V4 Group maintains a solid position in terms of sovereignty of their energy mix. Most of their public statements, especially in relation to EU policies, pin down the clause of TFEU 194 on the non-interference of EU competences to the ability of Member States of defining their own energy mix. This policy is not unique, it is widespread within the EU, and has not been challenged yet by Member States or the

Commission. Keeping full sovereignty over the energy mix is important for the Group not only from an energy security perspective (having the ability to install domestic capacities maintaining a certain level of domestic production even if it's not efficient), but also from an economic and social one (maintaining the use of coal or nuclear even with state interventions, or favouring lower retail prices over introducing renewable support schemes).

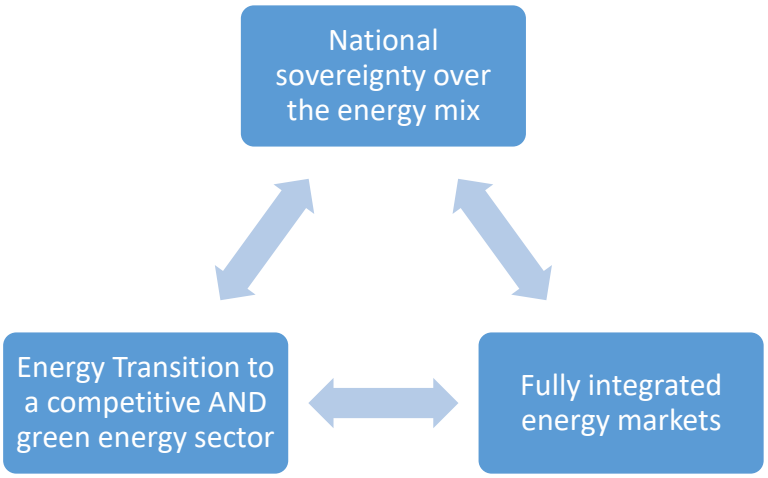
We may conclude that the Visegrad energy cooperation is clearly politically driven and is a political project. Formulating common positions towards the EU and forming a single block in certain external energy diplomacy issues gives weight to the countries. In terms of market integration the block is a useful and efficient tool to translate the functional EU legislation (e.g. network codes) to a gradually evolving market. Yet the primary goal behind the market (and infrastructure) development is to tackle the energy security risk, perceived as a major threat on political level.

THE POTENTIAL FOR DIFFERENTIATED COOPERATION UNDER THE ENERGY UNION – WITH OR WITHOUT THE V4?

THE PARADOX OF THE CURRENT ENERGY SYSTEM

The EU faces a paradox that its goals (fully integrated markets, energy transition, and competitiveness) and tools, abilities (either by the word of the Treaties or most importantly by the interpretation of the Treaties and the lack of political capital invested in the Commission by Member States) do not meet (Zachmann 2015). The paradox may be shown as an 'impossible triangle' where only two

points can be achieved under the status quo, but not all three at the same time[19].



1. If Member States can hold full sovereignty over their energy mix and the way to achieve it, they can introduce support schemes or other legal frameworks to increase the share of renewables or maintain nuclear or fossil capacities. These heavily distort the long term price signals on the market and reduce investments. As a result competitive[20] and green energy sector on national level could only be achieved at the expense of limiting trade (not to let the low prices, achieved by subsidies or some comparative advantage[21] 'out' of the national market), or exerting significant negative externalities to neighbouring countries (exporting low prices to countries which cannot guarantee necessary investments under such low prices, or buying excessive amounts of storage and/or balancing capacities imposing higher prices or even energy security risk to the exporter country). This would likely force disadvantaged countries to reconsider their participation in the integrated market.

2. Achieving energy transition with a fully integrated market would mean that economic efficiency (i.e. prices based on comparative advantages) would determine the quantity and location of various energy generating capacities and trade between Member States, and with third states. This would empty national sovereignty as a Member State would not be able to decide on its domestic energy mix or maintain any desired level of domestic (backup) generation capacity without distorting the market.
3. It would be likely possible to develop an integrated energy market between countries with sovereignty over their energy mixes. Such scenario would, however, not allow for any green revolution of the energy sector – if some countries would pursue energy transition, the situation would transform to the scenario no. 1 (above). If countries resort to use conventional energy sources without state interventions, the necessary investments for an energy transition (generation capacities, but especially development of the transmission and distribution system) would likely not occur. Maintaining the current, traditional utility business model presumably excludes a wide energy transition, within our current technological and economic predicament.

This paradox is not extreme in the sense that there is a possibility to find compromise between the aspects with efficient market and regulatory design. The aim is to underline, it is likely not possible to "eat the cake and have the cake", especially not all three slices of it[22]. The question is, if all Member States can subscribe to such a compromise, or some differentiated cooperation would likely arise to solve a political stalemate. Or the level of ambition has to be reduced, even though the Energy Union package was supported by Member

States[23]. Until such decisions are made on political level, uncertainty on the markets will remain strong and hinder developments in the energy sector.

REGIONALISATION AND THE POTENTIAL FOR ENHANCED COOPERATION

Currently regions are the building blocks of the common market integration. The local and functional cooperation of TSO's, national regulators are indispensable for introducing flexibility in the implementation of common market rules in terms of order or local specificities – even though the end-goal is common (De Jong and Groot 2013). This way smaller units implement gradually the common network codes developed by ACER, and a resulting patchwork of regions with emerging physical and legal interconnectedness will create the single energy market (first in electricity, later in gas presumably). In many terms market integration has already happened at least on regional level – a certain level of market liberalisation is common and practically all EU countries have coupled wholesale markets with at least few neighbouring markets (or will be soon, e.g. Bulgaria).

The Winter Package (if adopted) and the recent policies of the Commission point towards an increasing, and more policy oriented use of regional cooperation, even in less directly common market related issues (Stang 2017). The Commission might have a twofold reason to move into this direction.

– First the Commission possibly observed that throughout the process of establishing interconnectivity with neighbouring countries, many Member States have developed formal and informal procedures for

cooperation and coordination, i.e. the transaction cost of any future common project either in terms of energy security or reviewing national plans for 2030 might become easier and politically less sensitive. Some spill-over effects have also likely emerged as cross-border network developments were somewhat coordinated with neighbouring countries

– Second the Commission would likely try to imbue regions with more flexibility in making basic energy policy decisions. It has likely observed that "[R]ecent national policy decisions in some countries and continuing uncertainty in others have already led to various degrees of market reactions and impacts on investment decisions in neighbouring countries." (De Jong and Groot 2013, 12). In order to tackle potential conflicts and reap the benefits of cooperation, delegating some minor competences to regional level can send the message to solve such issues according to the principle of subsidiarity, closer to its origin.

The role of the regions is strengthening and it seems less likely that on short term an EU level response could be formulated to tackle the challenges of the energy transition due to the paradox at the core of the EU energy policy. Therefore it could be tempting for certain regions to pursue some form of differentiated (enhanced) cooperation scheme and give their own answers to those challenges, reduce uncertainty in their own regional markets, and try to shape the future of the Energy Union.

The next subchapter will briefly introduce two scenarios of such an enhanced cooperation – one in line with the principles behind the V4 energy cooperation, and one possibly leaving the Visegrad Group outside its scope.

POTENTIAL SCENARIOS FOR DIFFERENTIATED COOPERATION

SCHENGENISATION OF ENERGY POLICY

This scenario would see increased, voluntary coordination of fuel mixes among its members on a regional basis, leading to the "Schengenisation" (De Jong and Groot 2013, 30) of energy policy, i.e. increased pooling of sovereignty over energy policy decisions and in general creating a much more centralised market cooperation scheme. The main reason behind doing so is legislative and economic efficiency. By coordinating investments in the renewable sector and distribute them according to economic baselines could generate 15-30 billion € additional wealth in the EU by 2030 (Newbery et al. 2013). It would also likely reduce the need and the costs of capacity mechanisms[24], and also renewable subsidies. The governance of the newly formed 'club' could be managed by creating a regional regulatory authority and TSO (under the auspices of ACER and ENTSO-E/G respectively, to ensure harmonised operation with the general EU framework).

This scenario would acknowledge, that for several Member States (e.g. likely the V4) it would be unacceptable to move forward with revising the Treaties[25] and expanding the EU powers, but others want to move forward through some form of secondary legislation (Delors et al. 2010). It is not straightforward, however, how such differentiated cooperation would be possible. Enhanced Cooperation should not overstep the limits of the Treaties, and safeguarding national sovereignty of energy mixes is clearly stated in Article 194 of TFEU. It would also had to be argued, that such Enhanced Cooperation does not affect negatively the common market, i.e. maintaining proper

market functions between the participants and outsiders of the Enhanced Cooperation, and ensure that no harm is done to the outsiders. A multilateral, intergovernmental treaty is a more likely possibility like in the case of the Fiscal Pact, as it would face less restrictions, yet still, the participants of the differentiated cooperation would likely need to offer proof, that outsiders would not suffer economic or energy security harms.

The Pentalateral Energy Forum could be the main contender to form the base of such a differentiated cooperation. The regional initiative comprising of Austria, the Benelux states, France and Germany was formed in 2005 and promotes cross-border cooperation on energy exchange. The Forum, while helping to establish the regional market, served as a best practice of regional TSO and regulatory cooperation for the rest of Europe (De Jong and Egenhofer 2014). The main driver behind taking the next step could be Germany as the country is trying to translate the core of the *Energiewende* into EU energy policy decisions, and to help its own domestic transition process (Szulecki et al. 2016). Also the countries are much more reliant on each other in terms of electricity flows (especially Germany and Austria), but also capacity adequacy (France and Belgium both will possibly face capacity adequacy issues). France has also embarked on a (modest) energy transition, decreasing the share of nuclear power, and Belgium (nuclear power plants) and the Netherlands (decreasing gas production) also face serious energy policy challenges.

Should such a differentiated cooperation be formed, it would have various effects of non-participating countries – among them most likely the Visegrad Group. It would not bring solution to the current issue of loop-flows[26], and likely wouldn't affect price differences in the

short term. On the long-term, however, it might create similar situations as described in energy policy paradoxes 1 and 3.

FOCUS ON ENERGY SECURITY

The second scenario deliberately envisages a differentiated cooperation that could emerge on the basis of the current Visegrad energy cooperation framework. Such initiative would most likely focus on the issue of energy security. Not only because it is the central topic in the V4 framework, but also because the energy security framework within the EU is less developed than the size and integration of its energy market would suggest (López-Ibor Mayor 2009).

Advanced gas supply security measures could be proposed and taken in domestic and external directions: introducing stricter rules for solidarity, increased and common mandatory strategic gas storages, more coordinated crisis management procedures. In terms of external actions the idea of common gas purchases proposed by Donald Tusk and propagated by Poland in general could resurface – although not only many Member States have opposed it but it might also contradict the rules of the common market (Szulecki et al. 2016). In general, the EU energy diplomacy aspect could not be significant part of any differentiated cooperation as the common foreign and security policy is more consensual and politically sensitive issue.

An important development could be however the introduction of advanced electricity market security regulations and procedures. As the January electricity supply crisis in the Balkans has shown, the solidarity rules and their enforcement is far from adequate (Bauerova 2017). Activities to enhance the cyber security of the energy networks (information sharing, common response group) would also be a timely

and important step forward a more comprehensive energy security cooperation.

Such differentiated cooperation would enable the V4 to gain some political momentum, and also to shift back the energy policy focus towards energy security issues. Yet, currently most of such issues are of the sphere of external policy, and have various sensitive implications (e.g. issue of Ukrainian transit and Nord Stream 2). Also if any new institutions or investments would be needed, it would likely not be financed by the EU budget (certainly not under an Enhanced Cooperation scheme). The differentiated cooperation could gain supporters mainly from the region of CESEC[27] – energy security perceptions and priorities largely differ in South- and Western Europe (Austvik 2016).

CONCLUSION

It is apparent, that more flexibility is needed, if the EU wants to pursue more effectively its energy policy agenda. Either by delegating more decision making ability to the Commission, which can later relegate the implementation to the regional level with room for local solutions and different scheduling.

Although the slow and gradual empowerment of regions in the Energy Union framework would likely induce discussions on forming differentiated cooperation, doing so would require a political push and compromise so powerful and complex as only a few can be found in every decade in the history of the European integration. Energy policy is a key economic, social and security issue, substantially altering its current framework is less likely, until the EU is faced with even bigger political challenges.

It is questionable, if the V4 is united and indeed influential enough to pursue such an agenda. Although the Group will undoubtedly work further on strengthening the energy security discussion and framework, it is hesitant to delegate or pool sovereignty to regional or EU level, what would be crucial for a truly transformative energy security agenda.

The energy transition and Germany could likely become another core for a potential differentiated cooperation. Although the Pentalateral Forum seems a promising root for such an initiative, forming a block to pursue regionalised energy transition in faces several significant hurdles, presented above.

Although these are by far not the only potential topics or groups, some form of advanced cooperation could stem from, they illustrate that it is less likely for regions to form cooperation mechanisms for wider energy policy goals (energy security, energy transition). The main hurdle for regions to implement such advanced cooperation, even in minor scale, is the number and severity of externalities likely arising, as energy markets and infrastructure are more and more connected, interdependent.

To avoid such externalities, it is possible, however, that some distinct policy issues could be dealt with on the EU level, allowing for few states to opt-out or delay the implementation – also a form of flexibility. There are several issues, where potentially most of the Member States could come to an agreement in the coming years: expanding the role and power of ACER, introducing a common renewable support scheme and/or some sort of capacity mechanism, approving stricter solidarity rules in case of supply crises, especially

in electricity. These would be smaller but less fragmented steps towards finding a forward looking balance in the energy trilemma.

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[1] TFEU Part One, Title I, Article 3 defines exclusive competences, e.g. customs union, commercial policy, competition rules for the internal market.

[2] Currently only 4 Member States have opt-outs in 5 policy areas, never with more than two Members in a single policy area.

[3] Securing nuclear energy use and fuel supply was also key area regulated by the separate, later merged Euratom Treaty. Its scope and area has not changed or expanded significantly, and up until now it has not pursued a policy prescriptive or agenda setter role.

[4] As Article 194 of TFEU puts it: "[Measures taken under shared competence] shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply".

[5] Not to be confused with the Energy Community, the body of the Energy Community Treaty, established in 2006 to foster cooperation with the EU and its neighbouring countries on adopting the EU's energy *acquis communautaire,* and as such, one of the main tools of EU external energy policy.

[6] The authors argue that the preceding developments have completely fragmented the EU energy policy and deeper cooperation (Energy Community) is needed even if not all Member States are ready to participate (i.e. propose differentiated cooperation) (Delors et al. 2010). Yet the economic crisis and a sentiment of renationalising energy assets have not allowed the idea to shape policies for a while (Austvik 2016).

[7] Although the proposal dismissed the sustainability aspect of the common energy policy, as well as marginalised the non-supply security related aspects of the common market, it received more attention. The proposal was preceded by the annexation of Crimea and significant political tensions between the EU and its Members, and Russia; as well it was also part of Donald Tusk's run for the Presidency of the European Council.

[8] For detailed, historical overview on energy transitions, see (Smil 2010).

[9] Both target values (emission, renewables) and governance scheme (common, flexible targets instead of binding ones for member States) was watered down significantly compared to

the original Commission proposal (Tagliapietra and Zachmann 2017).

[10] A significant political win for the Commission as it receives the right to act as a benign censor for energy IGAs, a sovereign tool of the Member States' external energy relations.

[11] The Agency for the Cooperation of Energy Regulators is an EU forum for National Regulatory Authorities. ACER is developing the technical legal framework of the common market (network codes).

[12] Transmission System Operator – the company responsible for the operation and development of the transmission network of electricity and gas, ensuring the security and reliability of transit and supply to the distribution networks to which most consumers are connected to.

[13] For details see https://www.hupx.hu/en/Market%20Coupling/marketcouplinghistory/Pages/4mmc.aspx.

[14] This exposure was well presented in the antitrust case of the Commission against Gazprom as the Commission investigated, what damages the unfair and often illegal pricing mechanism of Gazprom caused to several CEE countries, including the Visegrad Group. For summary and evaluation see http://bruegel.org/2015/04/the-gazprom-case-good-timing-or-bad-timing/.

[15] They support the TANAP/TAP project, and repeatedly signalled to Washington on political level the positive energy security aspects of supplying US LNG to Europe.

[16] In 2009 the Hungarian presidency created the High Level Energy Working Group in order to foster the cooperation especially in the gas market and N-S corridor, which prepared the high-level V4+ Budapest Summit on 24 February 2010. The Summit put political impetus behind the project N-S corridor project, while trying to secure the needed EU funding for it. The Declaration also created *ad hoc* Expert Working Groups under the HLG for the N-S corridor (and LNG terminals), oil and gas crisis management and the 2020 EU energy and climate policy framework. The Polish presidency in 2013 established the V4 Forum for Gas Market Integration and presented the Road Map for gas market integration. The Road Map envisages the adoption of the developed EU network codes, and developing a Target Model based on the European one. There are numerous model to choose and proceed with, but as with the electricity market coupling, the inclusion of neighbouring states (especially Austria with the Central European Gas Hub) would be largely inefficient (Ascari 2013).

[17] The inauguration of the Swinoujscie Terminal and the Slovakia-Hungary interconnector are important steps, but still important interconnector capacities are missing especially between Poland and Slovakia and the Czech Republic, as well as the Croatian LNG project has been advancing particularly slowly. The 2014 stress test by the Commission has shown that V4 countries (especially Hungary and Poland) are still exposed to gas supply security disruptions from Russia, yet the used

scenarios are rather extreme and development compared to the 2009 situation can be observed indeed in terms of resilience in the group.

[18] The pipeline would replace the cancelled South Stream project and would supply Turkey with Russian gas, but could also supply the European market, if the second phase (2 additional lines) is built with the connecting infrastructure through the Balkans.

[19] This model is based on mainly the electricity sector, as that is going to be likely in the centre of the future energy system due to electrification and the much larger potential for generating electricity than other fuels from renewable sources.

[20] In this sense competitiveness refers also to the affordability of energy prices for the end user.

[21] Such advantage can be large renewable energy potential as a natural resource, or a large gas market with diversified supply options allowing for cheaper gas prices, or a large fleet of nuclear power plants operating on their marginal operational cost. Using domestic coal stocks can also lead to cheaper domestic prices, yet such scenarios falls short from being considered green.

[22] Disruptive and paradigm shifting changes in technology of electricity production, distribution and consumption are possible and even forecasted. Such changes could fundamentally alter the predicaments. Yet, based on the slow reaction time of the energy sector (including regulation) and the long investment cycles, it is reasonable to expect no radical shifts in the following years, when answers to the paradox are likely have to be offered.

[23] Approaching 2020 in many cases becomes apparent that national targets and rhetoric is hard to meet if at all possible. Abandoning ambitions would be likely most unfortunate for the environmental, economic and social future of the EU, yet in case of the 2030 goals a somewhat decreased level of ambition can be observed as noted in a previous chapter.

[24] Additional fee paid for the availability of flexible generation capacities – usually conventional coal and gas power plants, but possibly also for demand-management structures.

[25] Without revising, and in this case expanding, the Treaties, granting opt-outs for certain countries is also impossible, therefore negative differentiated cooperation (creating a general framework without certain Member States) is not an option either.

[26] These unplanned and uncontrolled electricity flows result in the Polish, Czech and Slovak (sometimes Hungarian) systems, when large quantities of electricity produced by wind farms in the Northern Sea travel through the regional system to Austria and Bavaria, as the domestic high-voltage North-South connections in Germany are inadequate. The sketched cooperation would not accelerate the development of the

German domestic transmission network and would certainly not decouple the German and Austrian markets.

[27] The Central and South Eastern Europe Gas Connectivity group intends to accelerate gas supply diversification and the integration of the gas markets of Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovakia, Slovenia and six Energy Community members (Balkan countries and Ukraine).

COMMENTARY

ALTERNATIVE SOURCES OF ENERGY

Natálie Terčová

ABSTRACT

Through alternative energy sources we look for energy that can help replace the use of coal and petroleum. Coal became popular when it replaced wood as the main source of fire and fuel. However, it is still being used extensively in power plants to produce electricity. Though a considerable switch to renewable energy sources is gaining momentum, it may take a while to produce the amount of power needed to run our daily lives. Similarly, petroleum is still a leading source of fuel to run vehicles today.

VARIOUS ALTERNATIVE ENERGY SOURCES USED IN V4 COUNTRIES

When it comes to energy, solar energy is ultimately the alternate source. Sunlight is required in the production of all fuels – including the non-renewable ones. On its own, it has plenty of applications. Solar energy is an efficient way to heat materials. With the help of solar panels, batteries and the right equipment, we can use solar water heaters, solar cookers and solar powered bulbs. There are no moving parts involved in most applications of solar power. There is no noise associated with photovoltaics. This compares favorably to certain other green-techs such as wind turbines. It can also be used to generate electricity in both small and large amounts. It is being used extensively these days in order to reduce electricity bills and become less dependent on the fuel-based economy.

Another alternative energy source that is renewable and has the potential to solve the energy crisis is wind energy. This is where windmills become our greatest ally. Large wind farms have been erected in areas where the wind is both fast and consistent. As the wind turns the blades of the power plant, it activates the turbine motor, the turning of which can produce electricity. Unlike solar energy, this cannot be transported or used directly. However, it has brought us one step closer to closing the gap between demand and supply. As a means of alternative energy, it is clean and produces no pollution. More than that, it requires much less investment than other forms.

Utility-scale turbines range in size from 100 kilowatts to as large as several megawatts. Larger wind turbines are more cost-effective and are grouped together into wind farms, which provide bulk power to the

electrical grid. In recent years, there has been an increase in large offshore wind installations in order to harness the huge potential that wind energy offers off the coasts of the U.S.

Single small turbines, below 100 kilowatts, are used for homes, telecommunications, or water pumping. Small turbines are sometimes used in connection with diesel generators, batteries, and photovoltaic systems. These systems are called hybrid wind systems and are typically used in remote, off-grid locations, where a connection to the utility grid is not available.

Wind does not cost anything and therefore operational costs are close to zero once a turbine starts running. Research efforts in the field of technology are going on to address the challenges to make wind power cheaper and a viable alternative for individuals and businesses to generate power. On the other hand, many governments offer tax incentives to create growth for wind energy sector.

How To Improve Energy Policy?

Currently, the V4 countries differ regarding their national security of supply measures and the level of their market integration. The Czech Republic and now Poland are considerably more diversified than Slovakia and Hungary owing to the access to western hub-based gas. I, personally, would suggest building more solar panels where possible, as well as turbines for the wind energy. As I described their pros and cons, I still believe that this move can make a huge profit for the future of energetics between V4 countries.

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ESSAY

V4 ENERGY COOPERATION: FROM SLOVAKIAN PERSPECTIVE IN CONTEXT OF GLOBAL AND REGIONAL DEVELOPMENT

PETER MIKULA

ABSTRACT

The international political system is subject to both integration and fragmentation on regional and global level. As a result of deepening of the processes of globalization, internationalization and interconnection of the national economies, the individual states cannot effectively face global and regional challenges on their own in isolation of the surrounding. Therefore, they are grouping into wider integrational units based on geographical and cultural proximity and common interests. In the context of economization of international relations, asymmetric distribution of strategic raw materials, and the increasing pressure of the global market on economic efficiency, a safe and stable access to energy resources is essential for every well-functioning and competitive economy.

ENERGY COOPERATION OF V4 COUNTRIES FROM SLOVAKIA PERSPECTIVE IN CONTEXT OF GLOBAL AND REGIONAL DEVELOPMENT

The nature of security threats has been dynamically evolving since the end of the Cold War. State security is no longer endangered only by force-military actions but various environmental, economic, political or energy threats. The international political system is subject to both integration and fragmentation on regional and global level. As a result of deepening of the processes of globalization, internationalization and interconnection of the national economies, the individual states cannot effectively face global and regional challenges on their own in isolation of the surrounding. Therefore, they are grouping into wider integrational units based on geographical and cultural proximity and common interests. In the context of economization of international relations, asymmetric distribution of strategic raw materials, and the increasing pressure of the global market on economic efficiency, a safe and stable access to energy resources is essential for every well-functioning and competitive economy.

INTRODUCTION

Energy security plays an increasingly important role in European Union policy, given the limited endogenous natural gas reserves and declining production. Special attention is paid to the countries of Central and Southeastern Europe, which are predominantly dependent on the import of natural gas from Russia. The concept of interdependence in Eurasia is a historical and geographic fact. However, the V4 countries started to consider this mutual interdependence as a negative one after the gas crisis of 2009. Energy

security of the V4 countries is, in addition to the energy policy of the EU and Russia, also determined by development in the global market. Slovakia was one of the most affected countries by the interruption of gas supplies from the Ukrainian territory. Therefore, it is one of the main goals of the Slovak energy to build alternative routes that would secure stable gas supplies in the case of another "chess match" between Russia and Ukraine and also limit the dependence on Russian energy policy. At the same time, is in the interest of Slovakia to gain access to the cheapest supplies of strategic energy resources that are environmental friendly. On the other hand, Slovakia benefits from the Soviet pipeline infrastructure as an important transit corridor between Russia and western EU states. Russian energy interest is to bypass the Ukrainian territory via building the northern or southern gas corridor that would minimalize the geopolitical and economical value of Slovakia as energy transport hub. Therefore, the second main goal of the Slovak energy is to adapt to the changing European pipeline map in order to maintain the strategic transit role of its territory.

The cooperation among V4 countries proved to be very beneficial in the pre-entry process into the Euro-Atlantic structures. This platform was especially important for Slovakia, which lagged behind other V4 countries in the accession negotiations with the EU and NATO, due to political isolation during the – "Mečiar period". Slovakia was provided with valuable know-how in meeting the requirements in the pre-accession period and also diplomatic support for accelerated integration effort. However, by successful integration into Euro-Atlantic structures the V4 countries have lost their core common goal that was encouraging closer cooperation. The level of cooperation has decreased to only limited and vaguely proclaimed plans that were

realized only on the paper sheets. New impulse to reestablish an effective cooperation on V4 level was the 2009 gas crises. Strengthening energy security has become a new motivating target for V4 countries to act as one united unit in promoting common interests.

GLOBAL DEVELOPMENT

From the global perspective the global development in LNG market and shale digging have the most crucial aspect on the European gas market and also on V4 countries. USA is due to „shale gas revolution" continuously turning from gas importer to gas exporter status. This has a significant impact on the global LNG market. With the combination of rising amounts of produced LNG, the exporters had to reorient their supply direction from Northern Amerika to Europe. The V4 counties profit from it in two ways. The first is that, the seedily rising amount of traded LNG on European spots and hubs developed pressure on the gas pricing system in long term contracts, that are based on oil prices in the favor of market mechanism – gas on gas (see map n. 1a-1b). That was one of aspects that determined the fall of gas prices in 2014-2015 in our region. The second benefit is hat the V4 counties can access the LNG trade via terminal in Poland and planned terminal in Croatia, which enhance their energy security in the term of supplier's diversification.

NORTH-SOUTH GAS CORRIDOR

One of the main priorities of the V4 countries immediately after the gas crisis was to build gas infrastructure in north-south direction. The aim of the project is to enhance the diversification of routes and suppliers by connecting to the Western Europe infrastructure, global LNG market and potential unconventional resources in Poland. The

North- South gas corridor is of particular relevance to Slovakia, because it strengthens the transit character of Slovak territory. Crucial points of the project are LNG terminals in Polish Świnoujście and Croatian Adria LNG on Krk island as well as the pipeline interconnectors between the V4+ countries. Slovakia took preventive measures by building the interconnectors between Slovakia-Hungary and Czech–Poland as well the installing of the reserve flow mechanism on the pipeline with Austria and CR to minimize the negative affect in the case of similar crisis as in 2009 would occur. A key phase for Slovakia is to build the interconnector with the Polish site, which is scheduled to be finished around 2020 and is being financed by EU founds. In 2010 the company Polskie LNG was created to build, own and operate the LNG terminal. Poland signed a deal with Qatar on import of 1,6 bcm gas until 2034. Imported amount of LNG was doubled in a new agreement in 2017 to supply Polish market with 3,2 bcm from 2018. Poland with an average annual consumption of 16 billion bcm pursues the long-term goal of reducing dependence on Russian gas despite the higher financial costs of LNG.

New opportunities for penetration into Central European gas market, lower building cost and new technologies have created a comfortable condition for investments into the long time planned Adria LNG. The demand for LNG has increased from Ukraine, which has been buying mostly Russian natural gas from opposite direction- from European gas network since 2014. LNG supplies could potentially be able to move across the Hungarian territory equally on the Ukrainian market. Great interest on building the Croatian LNG have also Slovenia and Austria, where the rest of the LNG that is not destined for Croatian consumption will most probably end. The terminal should

have a capacity of 3 bcm, and its commercial operation is scheduled for the end of 2019.

Competitor for Slovakia's energy ambitions and benefits in context of North-South gas project is Austria, which is seeking to increase its transit role on Slovakia's expense directly by AUS-CR project BACI and indirectly by CR-POL project STORKII (see map n. 2). The BACI gas pipeline will connect the Czech Lanžhot hub with the Austrian Baumgarten hub in both directions. BACI builds on the planned Moravia pipeline, which will connect the CR and Austria with underground gas storage facilities in the territories of both countries. These planned pipeline inter-connections are also important for Poland, which would also connect it with Baumgarten via Czech territory. The CR-POL project STORK II involves the construction of the second inter-connector between both countries with the capacity 7,5 bcm. Both project are on the EU PCI (Project of Common Interest) list. Slovakia and other V4 countries managed to strengthen their energy policy in terms of suppliers and route diversification by the progress in implementation of the North-South pipeline project.

A critical point of this project is the economical dimension of energy security. The gas market had shown that the inter-connectors between SR-HUN or SR-Pol have little or none value for commercial use. In other words: the amount of money invested in the interconnectors are not profitable. The question is, if we do really need interconnector with the between SR-Pol with no commercial interest, when we can build on already more developed infrastructure between POL-CR-SR.

UNCONVENTIONAL GAS DRILLING IN POLAND

According to IEA estimation, Poland has a vast unconventional- shell

gas resources on its territory. Initial assumption in 2011 were somewhere around 5,3 tcm. After two years the estimation of technically recoverable shale gas resources were drop by 20% to 4,1 tcm. The Polish Geological Institute is even more critical with the assumption and provides two version of the potential resources: conservative version - 346-768 bcm, and optimistic version- 1,9 tcm. Despite the reduction of the initial projection, the Polish government made a lot of effort in order to push the shale production with hope of similar success as the unconventional drilling in US. Poland is by supporting the exploration on shell resources pursuing two fundamental objectives. The first is to reduce the dependence on Russian gas or to, in a very positive scenario, become a gas exporter. And particularly the positive scenario would be beneficial to other V4 states, which could import Polish gas. The second objective foresees a similar trend as in the US, where cheap and cleaner shale gas replaced "dirty" coal-fired power in the energy mix. However, the exploration wells have not reached any major achievements, and large gas companies such as Exxon-Mobil, Marathon Oil, Talisman Energy, and Eni decided to leave the potential market. Simultaneously, the level of new establish exploration wells has been gradually decreasing. In 2013 there were only 12 new wells recorded, which is half the number of last year.

The main reason for the unsuccessful drilling are geological prerequisites. Unlike the US resources, the Polish resources are located deeper under the 1000m border, which increases the costs associated with drilling, increases the likelihood of local earthquakes and groundwater pollution. Also the shell quality proved to be essentially lower with greater proportion of clay mixtures compared to North America conditions.

Another reasons are environmental aspects. Environmental legislation at national level and in the EU generally creates greater administrative barriers and obligations for companies in the shell drilling sector than in North America. Unconventional resources in Poland are located in areas with relatively high population density. Following the experience from UK or Germany, shale drilling is almost always associated with protest of the local population. US resources are unlike in European condition located in peripheral regions.

We also have to keep in mind that the localization and exploration of the resources are only the first stage of the production chain, followed by the construction of drilling facilities, pipeline construction, transport to processing facilities, wastewater and material disposal… The shale production in US was unlike in Poland already from the beginning linked to an existing gas industry infrastructure. Investments in the construction of gas pipelines increase the overall costs at the very start of production and thus increase the investment risk.

Technology, know-how and experience in natural gas production also determine the level of production. The gas industry in America belongs to traditional industries. However, Poland does not have any experience with the unconventional drilling or the necessary know-how for the effective application of new technologies. Production also depends on the quality of the subcontracting sector, which is also not sufficiently developed in Poland. This all are minor reasons that are increasing the investments at the start of the production.

The unfavorable conditions have not stop some companies to continue their exploration work on shale gas. In 2014 the company BNK has

announced a successful exploration of one of their well with the potential to commercial drilling, but because of the price drop of natural gas all the activities around shale gas were "frozen".

Despite the global dynamic of technology development, the decrease in costs associated with unconventional drilling, and the determination of the Polish government to support investment in exploration wells, we do not expect significant production of shale gas in Poland over the next 10 years. Even if the commercial production of shale gas in Polish territory still started, we cannot expect it to have a significant impact on the markets of other V4 countries.

EASTRING

Slovakia gas transmission system operator Eustream responded to planned changes of the gas map of Europe by introducing the Eastring pipeline. The ambition of the project is to interconnect the Central European countries with the Southeast European region. And by realization of the project would Slovakia significantly increase the transit character of its territory. Eastring has also a potential to offer diversification of routes as well as suppliers in the region. In the first phase the gas would be transport from Western Europe across the Balkans to the Turkish border. In its final phase would be possible to transport gas in both directions and so opens up the possibilities of transporting gas through the Romanian and Turkish territories from the Caspian Sea, Iran, or potential Romanian gas fields in Black See cost. The planned capacity in the first phase is 20 bcm, and in the final phase 40 bcm.

The routing of the pipeline was initially considering only 2 alternatives (A/B). The pipeline would start in Slovak compression station Veľké Kapušany then continue through the territory of

Hungary, Bulgaria and Romania and end in the Turkish gas hub Malkoclar. In the present the Eastring routing has been adapting to the emerge of new numerous pipeline project in Balkan by presenting 3 more alternatives (see map n. 3). One of Easting's competitors in this region is the Tesla gas pipeline, which crosses the territories of Turkey, Greece, Macedonia, Serbia, Hungary and ends in Baumgartner- Austria. This is essentially an extension of the Russian Turkish Stream, whose construction is mainly in interest of Russia. The Eastring reaction on the Tesla project is the E version routing. The main competitor of Eastring project is the BRUA pipeline (see map n. 4), that cross the territory of Romania, Bulgaria, Hungary and end in Baumgarten hub. Unlike the Tesla project, there is no doubt that BRUA is a project of diversification of suppliers. Work on gas pipeline construction should start at the end of 2017 and are estimated to be finished around 2020. The completion of the construction is directly linked to the planned gas extraction of Exxon and Petrom OMV in the coastal shelf of Black Sea. The BRUA project is clearly the priority project of Romania.

Southeast Europe is characterized by a low level of gas infrastructure. The Balkan region was heavily affected by the 2009 gas crisis. The priority of the countries of the region is therefore the construction of necessary gas pipelines. From an energy strategy point of view, we expect the Southeast Europe states to generally support any pipeline project that would strengthen the critical infrastructure situation. Therefore, the best chance in the context of great competition in the region has project, that is able to progress with the construction as soon as possible and will be financially reasonable. Eastring pipeline is in both these pre- conditions in disadvantage. Firstly, it is a project of large financial investments. Secondly the progress of construction

is in compere to initial plan and also to BRUA pipeline in delay. A realistic scenario could be a project of building small inter-connectors pipeline between the Balkan countries, which are cheaper and progress faster in compere to large project such as Eastring, Tesla or BRUA. All these above mentioned factors decrease the possibility of the project Eastring to be build. However, the Eastring project could play an important role in potential supply of the Southeastern European gas market from Russian Northern gas corridor – in case the Nord Stream II is build.

RUSSIAN ENERGY POLICY AND NORD STREAM II

The Russian National Security Strategy until 2020 openly underscores that energy security plays a crucial role in the Russian national strategy and most importantly in the foreign relations of Russia. Energy policy is during the Putin administration regularly used as a tool on achieving foreign policy goals. This strategy fully reflects the pragmatic principles of so called "realpolitik" and is being pursued by Putin since the beginning of its government. Therefore, the Russian energy actions cannot be considered by EU as surprising or in-legitimate. In the discussions on the energy security the position of exporting countries is often being neglected. The priority for exporting countries such as Russia is to secure a share in the energy supply market at reasonably stable prices and high demand. Key importance in the long term perspective are diversification of costumer's (EU, Turkey, China) and minimization of the security threats and cost by diversification of the routes to the end-markets (by-passing of Ukraine).

The construction of the Nord Stream I (NSI) and planning of South

Stream (SS) has underlined the lack of cooperation in energy security in V4. Every country was rather following its own national interest and benefits: Hungary was seeking to increase the transit role of its territory by promoting SS project and CR had benefited from NS I by constructing the Gazela pipeline (see map n. 5). Poland together with Ukraine and the Baltic states were the only countries that opposed NSI. Polish officials compared the agreement on building NSI between Russia and Germany to Molotov–Ribbentrop Pact, where the two countries agreed on dividing Poland between themselves in Second Word War. Many authors are criticizing the EU and also Slovakia to not openly oppose the project. But we have to remember, that the construction work on the pipeline was ongoing only short after the devastating gas crisis in 2009. Many countries were therefore officially or silently welcoming the Russian "solution" of "problematic" Ukrainian territory in form of Northern corridor.

In the case of NS II, Central and Eastern European states were building united ground to oppose the project. Slovakia has accomplished that the NS II was one of the main topics discussed at the European Council Summit in 2015. The Slovak Ministry of Economy estimates the loss of transport fees by building the NSII for the state around at 400 -800 mil. EUR. The Baltic countries, Romania, Poland, Hungary and Slovakia sent a letter to the President of the European Council Donald Tusk in November 2016 requesting the suspension of NS II plans under the current legislation and the creation of an EU energy union. The project is also being criticized by countries that were interested in construction of South Stream project – like Italy and Bulgaria. Czech Republic did not join the other countries and is similar as in the NSI case following its national interest to enhance the transit status of its territory.

Although the construction of the South Stream gas pipeline has been canceled, Russia has nevertheless managed to create disputes and spread mistrust among EU member countries. European Commission has however only very little legal tools to block the project. First of all, the EU laws from Third energy package are not explicitly applying to off-shore territory – so the routing of NSII is in so called "grey zone". Secondly the NS I case could play a role of legal precedent.

Energy sector of Ukraine is by building of NSII affected at most. If the project is successful, we expect a significant reduction of the Russian gas flow through the Ukrainian territory. According to projections, the capacity of Russian gas flow via Ukraine in 2014 was about 59 bcm. The new capacities of NSII could limit the flow of Ukrainian pipeline infrastructure in east-west direction far below 30 bcm. This would reduce the revenue from transit fees and most importantly, it would not be profitable for Ukraine to operate his large and outdated pipeline infrastructure at such a low flow. Such developments would definitely not help Ukraine to find investments in the pipeline infrastructure, which urgently needs reconstruction and modernization.

Significant economic and geopolitical benefits have the construction of NS2 for Germany, where the gas pipeline ends. Germany would by construction of NSII become the most important transit and distribution country of Russian gas to European market. German energy companies and state budget would benefit from this thanks to transit fees and taxes.

Recent agreement between Gazprom and Eustream suggests also changing of Slovakia's position. Slovakia is adapting to the more and more realistic possibility of construction of NS II and gas supplying route in west-east direction. The Russian gas company has bought the

transport capacity in Germany at the level of 58 bcm per year on entry, another about 45 bcm per year in the Czech Republic and Slovakia. Eustream and the Czech company Net4Gas are therefore planning to increase capacity on the cross-border pipeline connection Lanžhot towards Slovakia.

We have to keep in mind that Russian Gazprom is the only company in EU that is capable of such a vast economic investment, that are profitable in the long ran. Another important factor in V4 cooperation and Russian energy policy context is, that every country is in some extend looking forward to gain economic benefits from transit of Russian gas. The NSII underlines the lack of cooperation among V4 countries in energy security and the tendency, that every state is perusing its own national energy interest.

MAPS

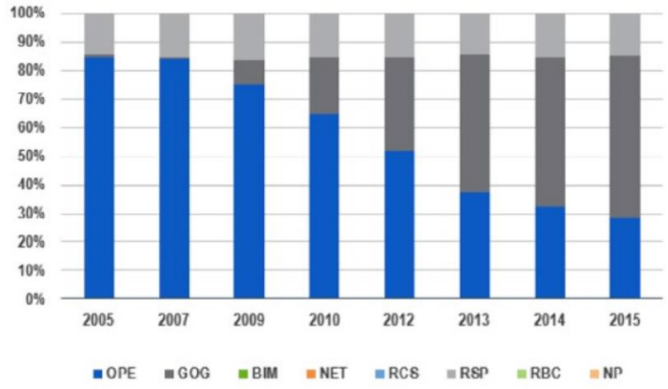
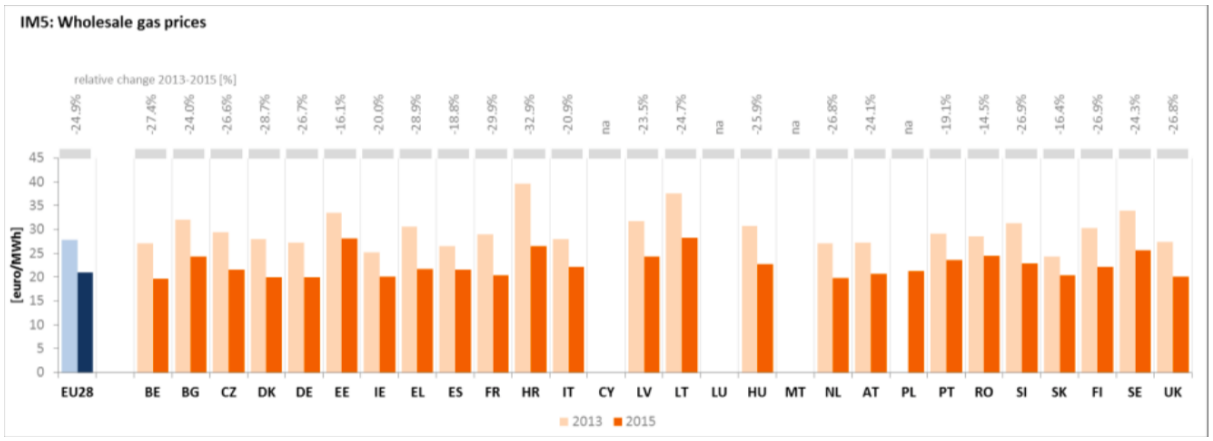
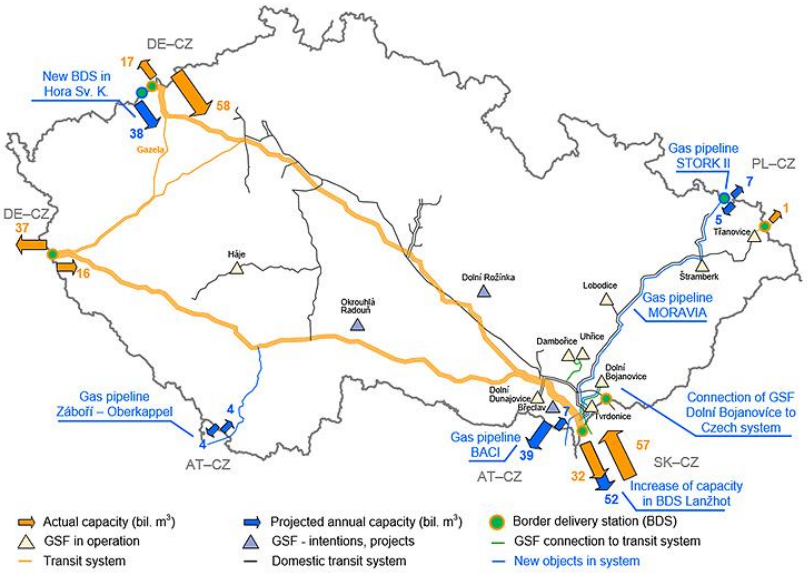


Figure 5.6: Central Europe Price Formation 2005 to 2015

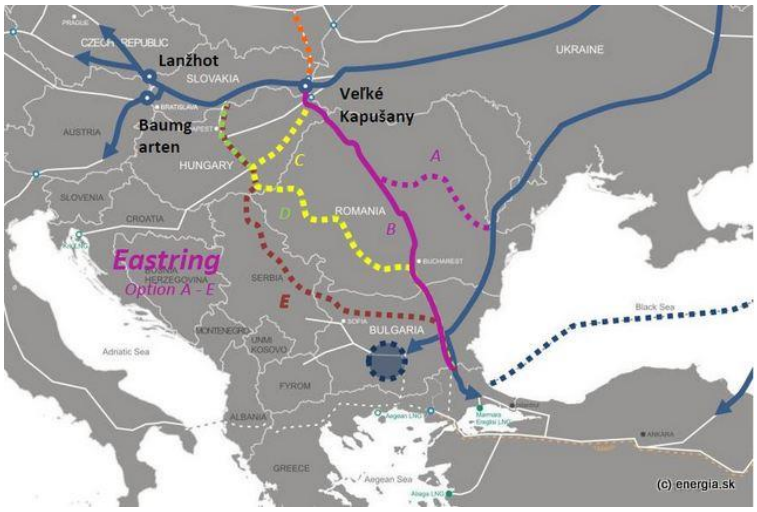
1st Image: Map Number 1a): Central Europe Gas Formation 2005-2015



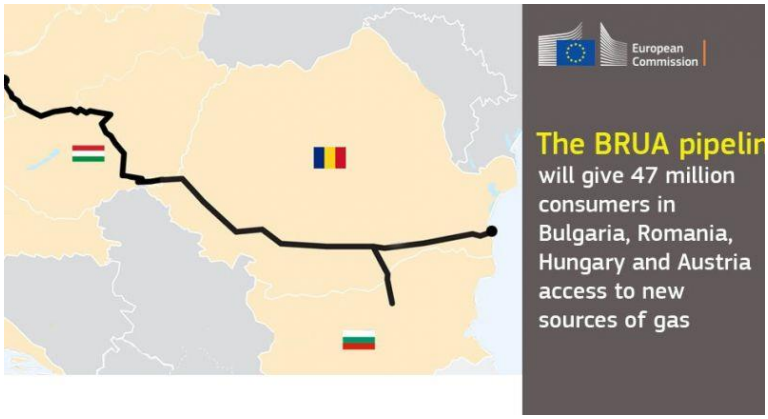
2nd Image: Map Number 1b) Drop of gas prices 2013-2015



3rd Image: Map Number 2) BACI and Stork II interconnector and Moravia Pipeline.



4th Image: Map number 3) Eastring Routing Alternatives



5th. Image: Map Number 4) BRUA Pipeline.

6th Image: Map Number 5 Gazela Pipeline.

ESSAY

SIGNIFICANT STILL COMPLEMENTARY: NATO'S CONTRIBUTION TO ENERGY SECURITY

PÉTER STEPPER

ABSTRACT

The main purpose of NATO as a military alliance is to defend its member-states from any external attacks with all means available. After the collapse of the Soviet Union more and more non-conventional threats appeared on international politics, thus NATO had to reinvent itself and adapt to the new security challenges. Access to vital energy sources has always been essential for its member-states, but did not think on international institutions as a useful tools, which can contribute to their own energy security. Even less efforts has been put on cooperating in NATO, a transatlantic military alliance based on the idea of consensual decision-making. It was simply not logical to expect any realistic common ground on energy security in a framework of NATO. Despite all of the problems mentioned above, energy security initiatives appeared on the agenda of NATO along the vast amount of new non-traditional threats. The aim of this article is to analyze these initiatives and to assess how significant still complementary contribution NATO has done in terms of energy policy in the last decade.

INTRODUCTION

Over the past decades and in the course of a complex discourse, NATO has decided to undertake a role in energy security. The Alliance has already reached a kind of 'acquis' related to energy security, based on three strategic priorities: political consultation and intelligence sharing; projecting stability; and protection of nuclear and non-nuclear critical energy infrastructure.

The International Energy Agency (IEA)[1] has a broad definition of energy security, whereby energy security equates to the "adequate, affordable, and reliable access to energy fuels and services, it includes availability of resources, decreasing dependence on imports, decreasing pressures on the environment, competition and market and market efficiency, reliance on indigenous resources that are environmentally clean, and energy services that are affordable and equitably shared." In the much shorter definition of the United Nations, energy security is "protection against shortages of affordable fuel and energy resources." NATO first referred to energy security in its 1999 Strategic Concept.[2] In this document, while the Alliance noted its core function was still to deter and/or respond to armed attacks on the territory of any of the Allies, it also emphasized that NATO's security could also be affected by other factors, such as the "disruption of the flow of vital resources."

Although the topic was mentioned at the 1999 Washington Summit, there followed a long period of silence, up until 2006. In 2006, the Russia-Ukraine gas dispute raised serious concerns about energy security. The dispute reached a climax on January 1, 2006 when Russia cut off supplies to Ukraine. After that, Poland put forth a proposal[3] suggesting that NATO members commit themselves to help one another during energy crises.[4]

U.S. Senator Richard Lugar,[5] a high-ranking member of the Senate Foreign Relations Committee, went even further, arguing that energy security should be a commitment under the Article 5 mutual defense clause of the North Atlantic Treaty. At the Riga Summit (29 November 2006), Senator Lugar argued[6] that, 'Because an attack using energy as a weapon can devastate a nation's economy and yield hundreds or even thousands of casualties, the Alliance must avow that defending against such attacks is an Article Five commitment. This does not mean that attempts to manipulate energy for international political gain would require a NATO military response. Rather, it means that the Alliance must commit itself to preparing for and responding to attempts to use the energy weapon against its fellow members.' Although Lugar was cautious not to suggest a military response to Russia's political move, his expressions clearly show the seriousness of the situation back in 2006.

However, it was not NATO's interest to apply Article 5 commitments to the field of energy security. There was a fundamental concern about putting additional pressure on the NATO-Russia relationship, and 'degenerating energy security debate in NATO into a Russia-bashing exercise.' The Riga Summit Declaration (2006) highlighted the importance of infrastructure security and directed the member states to consult on most immediate risks in the field of energy security and 'define the interests, where NATO may add value to safeguard interests.'

The Bucharest Summit (2008)[7] was the next step in defining common interests and articulating a NATO acquis in the field of energy security. The Allies have identified the principles which will govern NATO's approach in this field, and outlined options and recommendations for further activities. Based on these principles, "NATO will engage in the following fields: information and

intelligence fusion and sharing; projecting stability; advancing international and regional cooperation; supporting consequence management; and supporting the protection of critical energy infrastructure."

The 2010 Lisbon Summit[8] was a significant step forward, as it resulted in the adoption of a new Strategic Concept. The Strategic Concept9 noted that in the emerging new security environment, terrorism, "failed states" and cyberattacks will pose the most serious challenges in the future. The Concept also addressed the importance of energy security: 'some NATO countries will become more dependent on foreign energy suppliers and in some cases, on foreign energy supply and distribution networks for their energy needs. As a larger share of world consumption is transported across the globe, energy supplies are increasingly exposed to disruption.' The most important result of the Summit is that the Declaration requires member states to integrate energy security considerations into NATO's policies and activities. Thus over the course of the past decade's summits, NATO has not only included the notion of energy security into its framework step by step, it has also developed a kind of acquis for energy security. This acquis has three main pillars: political consultation and intelligence fusing and sharing; projecting stability; and Critical Energy Infrastructure Protection. Beside the traditional forms of political consultations, information sharing has already been institutionalized to a certain extent in terms of energy security. NATO established an Energy Security Section inside the Emerging Security Challenges Division, and also has a NATO Energy Security: Centre of Excellence (ENSEC COE).

Training programs have also demonstrated considerable results. Partnership programs such as the Partnership for Peace (PfP) contribute to the broader strategic environment in the field of energy security. Multinational approaches are also of great

importance in this dimension, as energy infrastructure links NATO allies with non-NATO countries. New security challenges have on multiple occasions required NATO to reassess its methods. The field of energy security is a good example, demonstrating that the traditional military approach used during the Cold War era is not always appropriate. In this case, the classical retaliation-based approach and the notion of geographical security may prove inadequate in addressing competing energy interests. In relation to pipeline protection, preventive cooperative measures such as political consultations and partnership building may be much more efficient than classical deterrence policies. To sum up, the above analysis indicates that NATO has chosen to undertake a role in the field of energy security. However, this role will be limited and complementary, rather than leading one. Although energy security is not going to move to the center of NATO's agenda, it is bound to get growing attention. Threats to energy security are real and imminent, but preventive measures could generate satisfactory solutions.

Enhancing energy efficiency in the military focuses on reducing the energy consumption[10] of military vehicles and camps, as well as on minimising the environmental footprint of military activities. A significant step forward in this area is the adoption of NATO's "Green Defence" framework in February 2014. Global trends show the growing energy needs of rising powers, the depletion of global fossil fuel reserves, the general increase in the price of raw materials and Europe's growing dependence on gas import. These trends revealed the necessity to decrease the consumption in most of the NATO member-states.

It is easy to understand that the price of fossil fuels can directly affect the military forces, while every $1 increase in a barrel of oil adds appx. $130 million to the US energy bills.[11] The US

Department of Defence spends about $20 billion per year on energy,[12] $15 billion on fuels and $5 billion on facilities. On the one hand, fixed military installations needs huge energy supply every single day of the year, but calculating these costs are relatively unproblematic. On the other hand, operational theatres (forward operating bases) has special needs providing energy on remote places and keep the number of casualties on a level as low as possible. During the ISAF mission, a lot of fuel convoy attacks has happened on a regular basis, not to mention the costs of transporting fossil fuels to generators huge enough to be able to provide electricity for a military base.

Most of the fixed installations in the military use the commercial power grid to acquire the necessary electricity to be operational 24/7 in 365 days/year. It is not just expensive, but creates vulnerabilities, from which commercial power grid has to suffer time to time. Energy outages caused by environmental risks, storms, earthquakes can threaten critical military infrastructure. In order to prevent these risks, US military supports to adopt micro-grid initiatives supplied by renewables, particularly by solar PV-arrays.

One of the most successful project is Fort Bliss[13], where US government already has 1.4 MW solar arrays and has installed a 13.4 MW rooftop solar array on post housing. Another success story is the Hickham Air Force Base14 in Honolulu installed a 3.4 MW solar system. In 2013, there were 384 MW of renewable capacity on DoD installations, but US government would like to increase it up to 706 MW in 3-5 years.

Speaking of solar energy we can find several arguments to use its potential based on a simulation15 made in 2010, which analysed the potential effect of using renewables in foreign operating military bases.

For each megawatt of solar PV energy acquired, the forward operating bases achieves 6.7 percent of fuel savings.

Installing a 2 MW solar PV array would reduce expected supply casualties by 12 percent.

Modern equipment like the Rucksack Portable Power System (REPPS) - consists of 4.5 kg portable battery recharging kit that features a 62 W solar panel blanket – eliminates the need to return to operational centre to recharge batteries, thus enhances the mobility of Special Forces.

NATO seemed to be active by and large in terms of increasing energy sustainability since the 2012 Chicago Summit. Danish and Lithuanian Ministers required a green agenda in 2013 and the NATO Secretary General supported a Green Defence Framework. The Energy Security Section within the Emerging Security Challenges Division launched several projects dealing with energy. Allied Command Transformation (ACT)16 has also been involved in raising awareness at the military strategic command level and holding several training courses together with ENSEC COE.[17] NATO Support Agency (NSPA) is also relevant in terms of promoting renewables in the field of military logistics. A Smart Energy Team (SENT)[18] was established right after the Chicago Summit to create innovative ideas and to provide a platform to present them for stakeholders.

HOW NATO COULD CONTRIBUTE TO ENERGY SECURITY?

The first way that NATO can contribute to pipeline protection is through information and intelligence sharing. Under this heading, several methods can contribute to pipeline protection. NATO offers different types of consultations for its member and partner states, including regular meetings on energy security and 28+n format on

various levels. During these consultations, NATO can act as a facilitator on energy security and pipeline protection planning, on sharing concerns, expectations and best practices, and developing cooperation.

NATO has the capabilities to support the direct protection of the critical energy infrastructure against risks. The Alliance identifies four main types of such risks: natural disasters, technical failures, political instabilities or conflicts and man-made attacks. Upon the request of the concerned states, NATO can support the relevant authorities in these cases with technical tools, communication services, technology transfer, or training and education facilities.

Last but not least NATO could save a waste amount of energy supporting sustainable energy sources like renewables and solar power in particular. Using solar PV arrays in operational theaters or in fixed installations at home also helps to reduce energy costs. Portable devices reduce the need of recharging batteries, thus increasing the mobility of troops and reducing the risk of casualties. Implementation of such modern energy sources could not just reduce the fuel costs but to enhance tactical capabilities and save lives.

[1] https://www.iea.org/

[2] http://www.nato.int/cps/on/natohq/official_texts_27433.htm

[3] http://www.spiegel.de/international/protecting-oil-and-gas-resources-nato-s-role-in-energy-security-a-563210.html

[4] Stepper Péter - Szálkai Kinga (2015) NATO's Energy Security Agenda and its Possible Applications in the South Caucasus, *Caucasus International,* Vol. 4. No. 3-4. http://cijournal.az/storage/posts/53/files/NATO%E2%80%99s%20Energy%20Security%20Agenda.pdf

[5] https://fas.org/sgp/crs/row/RS22409.pdf

[6] http://www.gmfus.org/commentary/lugar-attack-allies-energy-supplies-attack-nato-alliance

[7] http://www.nato.int/cps/in/natohq/official_texts_8443.htm

[8] http://www.nato.int/cps/po/natohq/official_texts_68828.htm

[9] http://www.nato.int/cps/po/natohq/official_texts_68828.htm

[10] http://www.nato.int/cps/eu/natohq/topics_49208.htm

[11]http://www.ensec.org/index.php?option=com_content&view=article&id=347:smart-energy-is-smart-defense&catid=123:content&Itemid=389

[12] http://www.ndc.nato.int/download/downloads.php?icode=429

[13] http://www.spa.usace.army.mil/Media/News-Stories/Article/479008/fort-bliss-to-launch-militarys-largest-renewable-energy-project/

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[16] http://www.act.nato.int/

[17] https://www.enseccoe.org/en

[18] http://www.natolibguides.info/smartenergy