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„THE COMMON ENERGY FRAMEWORK
OF THE EUROPEAN UNION:
The Objective of Energy Security in the 2020 to 2030 Climate and Energy Strategy Framework“

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Inhaltsverzeichnis

Abstract.....	i
1. Introduction.....	1
2. Status of Energy Security Indicators.....	8
3. Quantitative Evaluation of Energy Security: Current EU Practice	16
3.1 Country-Specific Supplier Concentration Indexes (SCI) on Diversification.....	16
3.2 Energy Dependence Indicator (EDI) Based Assessment of Member States.....	18
3.3 European Gas Stress Tests	20
4. Context of Energy Security in the EU Policy-Making.....	26
4.1 Security of Supply in the EU Energy Policy: Objectives and Measures in a Nutshell	26
4.2 The EU Energy Policy-Making Institution: The Ordinary Legislative Procedure.....	36
5. The 2030 Common EU Climate and Energy Policy Framework.....	42
5.1 The 2030 Package So Far.....	42
5.2 Energy Security in the Public Consultation for 2030 Framework: Member States	46
5.3 Community Method, Union Method or/and Open Method of Coordination?	51
6. Conclusion	60
Bibliography	64
Primary sources.....	64
Secondary sources.....	67
Annex.....	71

Abstract

Officially concluded by the European Council in October 2014, the 2020-2030 European Union Climate and Energy Strategy Framework is the fundamental guiding document of EU's policy development in the area of climate and energy for the next coming decade. Three headline targets, namely the reduction of Greenhouse Gas emissions, renewable energy and energy efficiency, are clarified with quantitative indicators and simulations in the 2030 working document, which therefore offers the adoption of the 2030 package through the ordinary legislative procedure with reinforcing legislative significance to differentiated extent in the targets.

However, though its importance has also been recognized in the 2030 framework, energy security remains as non-headline and aspirational target without concrete quantitatively based indicators or metrics for mathematical and economic simulation and assessment, thus missing the opportunity to be presented in the systematic scenario modeling and to be evaluated for formulating effective policy options. Its weak status should not be attributed to the unavailability and inaccessibility of energy security indicators in the notice and practice of the EU policy decision - as the integral part of the 2030 package, the European Energy Security Strategy presents the relevance of the indicators including Country-Specific Supplier Concentration Indexes (SCI) on Diversification, the Energy Dependence Indicator (EDI) Based Assessment of Member States, and the European Gas Stress Tests - but reflect the limitations that EU is facing when quantifying energy security due to technical feasibilities and political appropriations.

Even so, further investigation on the addressed indicators for diversification, dependence and disruption of energy supply shows that their national orientation are more functioning as technical and consultative analysis for policy options and their outcomes rather than as potential pre-legislative regulations. This brings us to examine the softness core of the energy security target embedded in the hard shell of the ordinary legislative procedure: an integrated interpretation with combining EU policy making modes of the Community Method and the Open Method of Coordination thus proves its feasibility and necessity.

Zusammenfassung

Der „Rahmen für die Klima- und Energiepolitik bis 2030“, offiziell beschlossen vom Europäischen Rat im Oktober 2014, ist das fundamentale, richtungsgebende Dokument der Politiksentwicklung der EU auf dem Gebiet der Klima- und der Energiepolitik für die kommende Dekade. Drei Hauptziele, nämlich die Reduktion der Treibhausgasemissionen, Erhöhung des Anteils der erneuerbaren Energie und die Steigerung der Energieeffizienz sind mit quantitativen Indikatoren und Simulationen in dem Working-Dokument des Rahmens herausgearbeitet, das somit die Übernahme des 2030 Pakets in das ordentlichen Gesetzgebungsverfahren der Betonung der legislativen Signifikanz mit Differenzierung in den drei Zielen anbietet.

Jedoch, obwohl ihre Bedeutung in den 2030 Rahmen erkannt worden ist, hat Energiesicherheit keine eigene Überschrift, sondern nur als angestrebtes Ziel ohne konkrete quantitative Indikatoren oder Metrik für mathematische oder ökonomische Simulationen und Berechnungen, und daher wurde die Gelegenheit verpasst, es in einem systematischen Modellszenario zu präzisieren und für eine effektive Politikoption zu evaluieren. Sein schwacher Status darf nicht mit dem mangelnden Vorhandensein oder Zugänglichkeit von Indikatoren der Energiesicherheit in der Aufmerksamkeit und Praxis der EU Politik Entscheidungen zugewiesen werden – als ein integraler Teil des 2030 Pakets, präsentiert die „Strategie für eine sichere europäische Energieversorgung“ die Relevanz der Indikatoren, inklusive der länderspezifischen “Supplier Concentration Indices (SCI)” über Diversifikation, die Energieabhängigkeit Indikatoren (EDI) der Mitgliederstaaten, bis zu den europäischen “Gas Stress Tests” – aber sie reflektiert die Beschränktheit der EU, wenn sie Energiesicherheit quantifizieren will – auf Grund von technischer Machbarkeit und politischer Förderung.

Weitere Untersuchungen der angesprochenen Indikatoren für Diversifikation, Abhängigkeit und Unterbrechung der Energieversorgung zeigen, dass ihre nationale Orientierung mehr für technische und beratende Analyse von den politischen Optionen und deren Ergebnisse als potentielle vor-gesetzgebende Regulative funktioniert. Das bringt uns zu den weichen Kern von dem Ziel von Energiesicherheit, der in die harte Schale vom ordentlichen Gesetzgebungsverfahren eingebettet würde: eine integrierte Interpretation, die EU Richtlinien

der Gemeinschaftsmethode mit der Offene Koordinierungsmethode kombiniert, beweist dadurch ihre Machbarkeit und Notwendigkeit.

1. Introduction

Energy security of the European Union (EU) has been witnessing a gradual shift in itself with some highlighted international moments in the past few decades. Most Member States and citizens enjoyed the security and prosperity brought by stable energy supplies since the oil crisis of the 1970s, which was challenged, however, in the winters of 2006 and 2009 when citizens in the Eastern EU countries had to face temporary gas supply disruptions caused by geopolitical instabilities.¹ EU enlargement towards east and the possible consequences in the security of energy supply, together with considerations on the relevant issues such as infrastructure, internal market, diversification of supply etc, revealed their significance not only in academic debate, but also entered the daily language that people could encounter in media for their well-being.

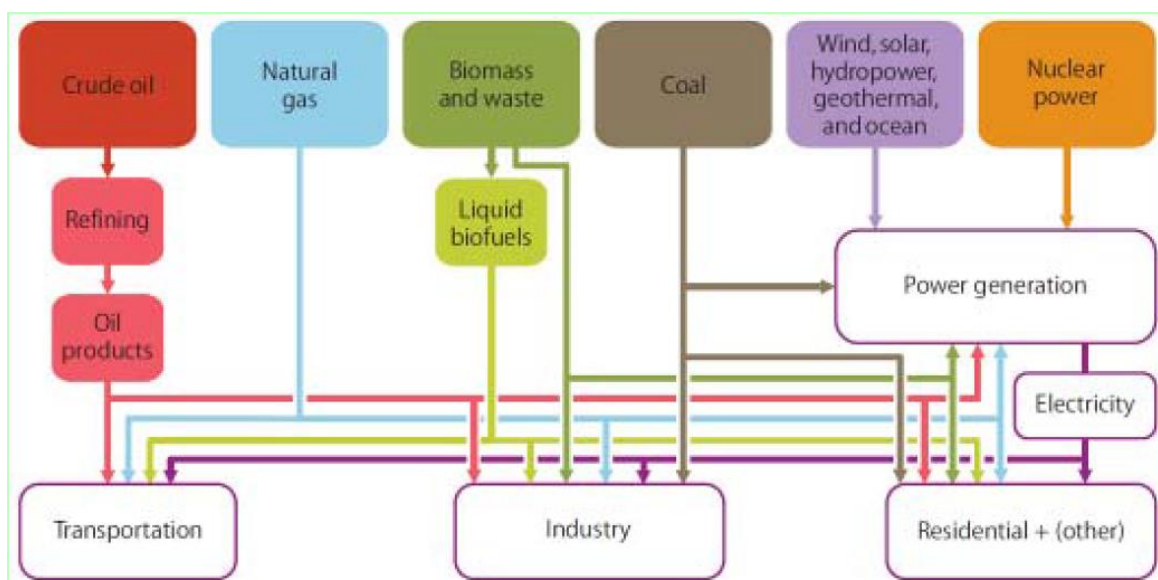
As one of the biggest global energy importers, the European Union has fully recognized the relevance of energy security in its agenda setting process, for which East and Central European Member States are keen as to promote the solidarity of EU in dealing with external powerful supplying countries, especially Russia as a whole. Special concern has been put on the political and economic scenarios perceived from time to time to find possible approaches to increase EU energy security, while more established Member States in the west sometimes show more interest in taking bilaterally diplomatic routines.² EU has been seen as a political arena on which topics originally belonging to the national policy category began to emerge, resulting in comparison, competition and integration because of the development of EU authority and the modes of regional energy policy design.

One of the most recent and important outcome of EU energy policy making is the *European Energy Security Strategy* (EESS) presented by the European Commission in 2014. In its accompanying working document for working staff, a study of EU energy security is in-depth conducted to provide intensive information and analysis for the understanding of Member States,

¹ See Communication from the Commission to the European Parliament and the Council: European Energy Security Strategy, SWD(2014) 330 final, p.2.

² Buchan 2010: 368

the European Parliament and stakeholders, with regard to sources, diversity, dependency and cost of energy in each Member State and for the EU as a whole.³



Energy system in IEA MOSES working paper 2011

At the beginning of the working document, supply security of energy is shortly defined as "uninterrupted access to energy sources at an affordable price", compared with a more comprehensive and holistic interpretation of energy security in energy system: to assess risk and resilience at the each point of the process from energy supply via transportation to consumption, and finally including customers as part of the composition in the system in short-, medium and long term.⁴ The broader definition contributes for thoughts to transcending the narrow attribution of supply security to states, state-bound companies and market mechanisms through enabling the involvement of civil society and individual residential in reducing dependence on external energy sources and securing affordable energy consumption. In this case, as what has been evaluated later in the Energy Union initiative, it is more than necessary to make clear the vulnerability of EU to external energy shocks, and that citizens are entitled to be presented the knowledge on the choices involved in reducing our dependency on particular fuels, energy

³ See Commission Staff Working Document: In-depth study of European Energy Security. Accompanying the document "Communication from the Commission to the Council and the European Parliament European Energy Security Strategy", COM(2014) 330 final, p. 3

⁴ Ibid.

suppliers and routes, both at national and EU level.⁵ EESS also introduced seven pillars to enhance EU's long-term energy security:

1. Strengthening emergency/solidarity mechanisms including coordination of risk assessments and contingency plans; and protecting strategic infrastructure;
2. Moderating energy demand;
3. Building a well-functioning and fully integrated internal market;
4. Increasing energy production in the European Union;
5. Further developing energy technologies;
6. Diversifying external supplies and related infrastructure;
7. Improving coordination of national energy policies and speaking with one voice in external energy policy.⁶

The energy security in the European Energy Security Strategy is designed as a integral part of the 2020-2030 European Union Climate and Energy Strategy Framework.⁷ The political priority, as shown in the 2030 package adopted by the European Council in October 2014, is in line with EU's long-time proposal to transit to a low-carbon and effective economy with the reduction of carbon emission, for which the interconnection particularly to the Baltic States, Spain and Portugal, and the facilitation to internal energy market stays as the focus of the policy implementation by the Member States and the Commission.⁸ The 2030 framework, together with its strategic sub-agreements, identifies energy security, both at the narrow and broad definition, as one of the most important objectives to be realized through the cooperation and coordination among Member States, which will shape the basic keynotes of EU's future development in the closely linked area of climate and energy in a more inclusive and sustainable manner.

As the main subject frame of the thesis, the 2030 Climate and Energy framework per se will be elaborated in Chapter 5.1. Here one point is to be highlighted to further our discussion on the

⁵ See Energy Union Package: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank - A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy, COM(2015) 80 final, p.4.

⁶ See State of the Energy Union 2015 - Commission Staff Working Document on the European Energy Security Strategy, SWD(2015) 404 final, p. 2.

⁷ See Commission Staff Working Document: In-depth study of European Energy Security. Accompanying the document "Communication from the Commission to the Council and the European Parliament European Energy Security Strategy", COM(2014) 330 final, p. 3

⁸ See European Council (23 and 24 October 2014): Conclusions on 2030 Climate and Energy Policy Framework, SN 79/14, p.6-7.

issue identification of EU's energy security: other than objectives as reduction of the Green House Gas (GHG) emission, renewable energy (RES) and energy efficiency (EE), energy security remains as non-headline and aspirational target without concrete quantitatively based indicators or metrics for mathematical and economic simulation and assessment, thus missing the opportunity to present systematic scenario modeling and evaluation for formulating effective policy options.

The Working document of 2030 package explained that the absence of energy security in the quantitative assessment family could be possibly as: 1) it will not add the complexity of interacting and being compatible with other objectives, otherwise it would be difficult to ensure that policy decision towards a broader set of targets would not lead to the progress of meeting one target works against another; and 2) the international dimension of security of supply and the heterogeneous approaches and concerns of Member States to some extent impede the easy conception of progress on simple but comprehensive targets to be ensured through concrete policies at the EU level.⁹

Therefore this thesis is trying to figure out concretely why out of these statements there is no quantitative indicator for energy security in the 2030 package. Methodology-wise, plenty of EU official documents, including legal terms and texts; green/white paper; communication from the European Commission to the Council of the European Union and the European Parliament; informational, analytical, service report and assessment drafted by the Commission etc., contribute as the fundamental primary sources for the methods of document analysis and policy analysis. Reference is consulted to extract the principle and intention of the past and ongoing policy decision and implementation to establish a clarified and concentrated arena of institution – the institution in the definition of what Crawford and Ostrom depicted as “a widely understood rule, norm, or strategy that creates incentives for behavior in repetitive situations”, which “may be formally described in the form of a law, policy, or procedure, or they may emerge informally as norms, standard operating practices, or habits. Alone or in a set of related arrangements, they

⁹ See Commission Staff Working Document Impact Assessment - Accompanying the document: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A policy framework for climate and energy in the period from 2020 up to 2030, SWD(2014) 15 final, p. 98.

are mechanisms for adjusting behavior in a situation that requires coordination among two or more individuals or groups of individuals.”¹⁰

Those individuals and groups of individuals involved in the coordination interact with each other under the institution constructed through making commitment and jointly determining the outcome from differentiated but inter-impacted strategies which could reflect the institution they have interpreted for themselves, and planned to react to, with predicting the payoffs that they will receive at the end of their interaction.¹¹ Their interpretation and reflection at the same time is also shaping the institution that would further be perceived, and will transform into part of the institution with the functioning power relations, economic mechanisms, and conceptual competitions, or more precisely, the mixture of the three or more without excluding classifications. Within the framework of the institution, intentions and behaviors in the action arena, which “includes the action situation, and individuals and groups who are routinely involved in the situation (actors)”¹² – in the case of the thesis the stakeholders of the EU energy security decision, and the involved EU institution and institutionalization – is therefore the approach chosen to be taken in examining why a reform for quantifying energy security in 2030 targets has yet been welcomed.

Hence the thesis is aiming at finding the possible reasons of decisions made already, not instead trying to suggest how to make the qualification happen in the future – if it is really expected. An overview on how energy security is quantitatively investigated in the current academic research is thus to be operated in Chapter 2 before further concrete zooming-in to EU in Chapter 3 for better understanding the choices that are preferred to be made. In this case data collection is essential to identifying applicable quantitative indicators and models. Many of the energy statistical data being applied to the quantitative analysis and comparison in many EU regional and national policy design and performance evaluation come from Eurostat. Initially having started its responsibility in 1953 as the Statistics Division for the Coal and Steel Community, the function of Eurostat was confirmed by the agreement of establishing European Economic Area

¹⁰ Polski and Ostrom 1999: 3

¹¹ Tsebelis 1999: 2

¹² Polski and Ostrom 1999: 6

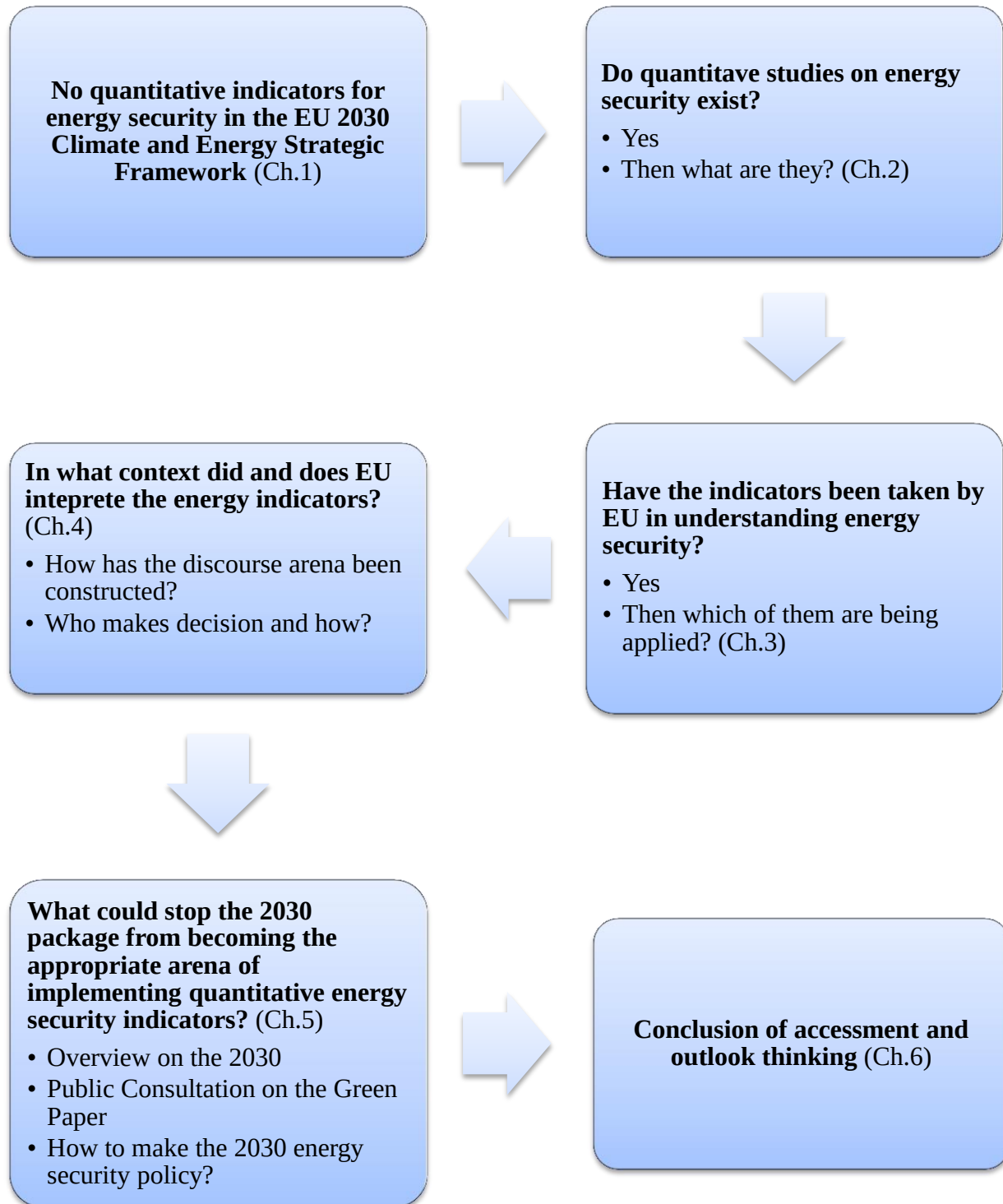
(EEA) and the adoption of Maastricht Treaty in 1991.¹³ Currently Eurostat stands under the portfolio of the Commissioner for Employment, Social Affairs, Skills and Labour mobility of the European Commission, and offers statistical services to other Directorate-Generals in the Commission, as well as to other European institutions, national governments, business and industry, education sector and academia, media and the public for their free use.¹⁴

Reply papers of the public consultation after the adoption of the 2030 Green paper before the conclusion made by the Council of the European Union is another database for document and policy analysis as they are the most relevant and easily accessible documents to the 2030 package design. The absence of the energy security indicators in formal 2030 EU narrative also raises the importance of the suggestions given by the outcome of the public consultation participated by a broad range of stakeholders including public sector, private sector and civil society. Opinions on the interaction and inner-relevance between the targets and the possible indicators to be considered on energy security were collected to present the understanding of various stakeholders, which will be depicted and analyzed in the Chapter 5.2. Coding and situational analysis from the Grounded theory has been chosen as the proper method to process the reply papers and make position maps. Discourses related to energy security in the reply papers are filtered out (Annex) and classified into the categories pre-set either by the European Commission in the questionnaire for the public consultation, or according to the key concepts obtained from the existing policy paradigms (Chapter 4.1). The relationship between the discourses (with the abbreviations of the countries holding the statement beside) and their interaction with the main themes, i.e. internal energy market and diversification of energy supply, is demonstrated in the position map, among which “setting objectives (in various forms) for energy security” and “no conflict of objectives” is highlighted.

The following flow chart explains how the thesis is structured and conceived as whole:

¹³ See <http://ec.europa.eu/eurostat/about/overview/what-we-do>. Last time accessible on 31.01.2016.

¹⁴ See <http://ec.europa.eu/eurostat/about/overview>. Last time accessible on 31.01.2016.



2. Status of Energy Security Indicators

The epistemological clarification of energy security is an essential prerequisite to effectively interpret the issue with quantitative methods. Energy security definitions of international and regional organizations, though varying in different perspectives from time to time, shows general similarity anchoring in several unvaried and fully referred dimensions. For instance, International Energy Agency (IEA) defines energy security as "uninterrupted availability of energy sources at an affordable price" with the inclusion of the short-term objective to improve the ability of energy system in responding immediate balance changing in supply and demand, and promoting investment in energy supply oriented to economic and environmental development in the long term.¹⁵

Similarly, the World Energy Council (WEC) in principal gives energy security the definition of "an uninterruptible supply of energy, in terms of quantities required to meet demand at affordable prices"¹⁶, and UNDP also highlights "the continuous availability of energy in varied forms, in sufficient quantities, and at reasonable prices" as the main aspect in defining energy security, with environmental challenges, liberalization and deregulation, and the growing dominance of market forces playing impacting roles with importance as well.¹⁷

What could be observed from these examples is that on the one hand, the definition of energy security would be adjusted and interpreted in different approaches in view of various actors and contexts. New factors such as new regionalism, global market, environmental outputs etc. are coming into the conversation gradually to introduce new footnotes to the consideration in securing energy system.¹⁸ On the other hand, nevertheless, the epistemological interpretations and the corresponding indicators being applied to analyze them could more or less be related to Availability, Accessibility, Acceptability, and Affordability -- the classical 4 dimensions of As in understanding energy security in general. Being depicted in the given four quadrants of the coordinator below, the approach of the 4 As is taken frequently as a starting point of the

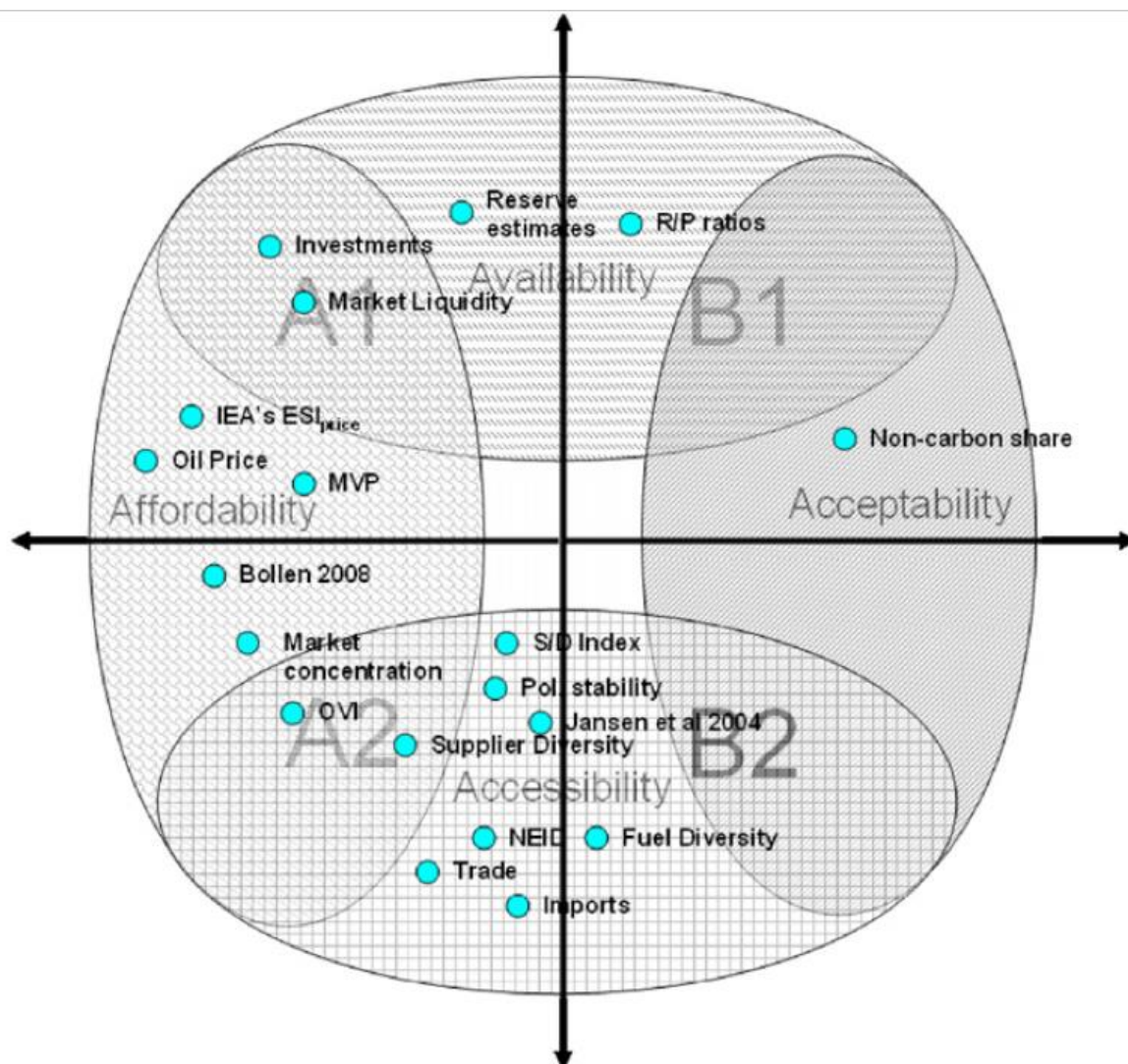
¹⁵ See <http://www.iea.org/topics/energysecurity/>, last time accessible on 31.01.2016.

¹⁶ WEC 2008: 1

¹⁷ UNDP 2000: 112

¹⁸ Krut et al. 2009: 2167

contemporary energy security studies and employed by mainstream international community to prepare working document, policy paper and research seminar.¹⁹



The 4 As energy security spectrum and the focus of the indicators summarized in the tables below²⁰

The 4 As dimension of energy security, namely energy resource Availability, Accessibility barriers, environmental Acceptability, investment cost Affordability was systematically elaborated by Asia Pacific Energy Research Center (APEREC) in 2007 based on the study of energy policy and national statistics in the region of Asia-Pacific Economic Cooperation. In the research report, energy resource availability stresses the reserves of conventional/non-conventional oil and gas, as well as coal and renewable energy on the long-term base, while the

¹⁹ Cherp and Jewell 2014: 416

²⁰ Krut et al. 2009: 2171

emphases of accessibility barriers lie in: 1) the geopolitical factors which could lead to imbalances between demand and supply and the risk of failing to meet increasing global demand; 2) infrastructure investments and huge sale contracts; 3) domestic transportation costs; 4) human resource capacity; and 5) the lack of financial instruments and advanced technology. For environmental acceptability it refers self-explanatorily to the environmental sustainability in link with GHG emissions, technology development and commercialization, and the potential risk of pollution during production and consumption. Last but not least, under investment cost affordability the variety of energy sources in capital costs, price and cost competitiveness would be taken into detailed analysis.²¹

Kruyt did a systematic overview on 10 simple indicators and 5 aggregated indicators (or indices) for energy security from the literature available in 2009 and categorized them into the coordinator above according to their position on the spectrum of the 4 As. The nature and characteristics of the 15 indicators/indices could be summarized into the tables below²², many of which are used to investigate the energy security issue in EU-27 or European OECD countries:

Single Indicators			
		Definition/Expression	Remarks/Criticisms
1	Resources estimates	Actual existence or availability of the remaining energy sources	There is still large uncertainties about the amount of hydrocarbon resources and their extraction potentials on the planet.
2	R/P ratios or RPRs	(Available) reserves to (current/projected) production	Indicating the years of production left at current production levels, might be simplistic for rapidly changing demand and/or highly uncertain reserve estimates
3	Diversity	Diversification in energy type and geographical source, three key elements to be considered: Variety (the number of categories), Balance (the spread across categories) and Disparity (the degree to which the categories are different from each other)	Absence of the definition of disparity, thus some form of subjectivity (or arbitrariness) may exist, and various fuels carry different disruption risks which could be translated into price shocks spilling over from one

²¹ APERC 2007: 1-2

²² The tables following are summarized from Kruyt et al. 2009: 2168-2171

			market to another
4	Import dependence	Net imports, and more refined, economy's import dependence weighted with its fuel diversity	The most commonly used indicators for security of supply
5	Political stability	Political situation in supplier countries, for instance: a. <u>PRS</u> International Country Risk Guide Methodology (ICRG) ²³ ; b. <u>IEA</u> : civil unrest in the location of resource concentration and the likelihood of government abusing the country's position in the market. World Bank's Worldwide Governance Indicators of Political Stability and Absence of Violence and Regulatory Quality are introduced ²⁴ ; c. <u>UNDP</u> human development indicator (HDI): concerning "average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living". ²⁵	States' willingness to trade or the stance towards specific regimes might be more representative, and it is often proprietary to do commercial political risk assessments.
6	Energy price	Functioning as balancing mechanism in a well functioning market, indicating the relation of supply and demand, and reflecting scarcity and depletion of energy resources. Oil price is a crucial indicator.	Factors such as speculation, strategic communication, short-term shortages are influencing prices. Besides, due to the difficulty to model oil prices accurately, oil prices are mainly

²³ ICRG assesses the political stability on a comparable basis by rating political risk with a pre-set group of components as the table below, to each of which fixed weight is given. The lower the risk point in total for a country is, the higher the political risk could be. See PRS 2012: 2-3

Sequence	Component	Points (max.)	Sequence	Component	Points (max.)
*A	Government Stability	12	G	Military in Politics	6
*B	Socioeconomic Conditions	12	H	Religious Tensions	6
*C	Investment Profile	12	I	Law and Order	6
*D	Internal Conflict	12	J	Ethnic Tensions	6
*E	External Conflict	12	K	Democratic Accountability	6
F	Corruption	6	L	Bureaucracy Quality	4

²⁴ IEA 2007: 56-57, in which Political Stability and Absence of Violence "measures perceptions of the likelihood that the government in power will be destabilised or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism", and Regulatory Quality "measures the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development."

²⁵ See technical notes of UNDP HDI, last time accessible on 24.01.2016 under: http://hdr.undp.org/sites/default/files/hdr2015_technical_notes.pdf

			seen as useful indicator relative to other scenarios.
7	Mean variance portfolio theory	Optimization method by considering unit generating costs, variance in fuel costs and the correlations amongst different fuel costs through portfolio analysis to provide an 'efficient frontier' as "a limit in the cost-risk domain beyond which (energy) investment portfolios cannot be made less costly without increasing their risk, or vice versa cannot be made more risk adverse without increasing their cost." ²⁶ Different trade-offs between risk and cost are represented through moving along this frontier.	The assumption of using past data on cost of fuels to estimate the risk and magnitude for future projections is criticized as historical patterns is not doomed to repeat themselves.
8	Share of zero-carbon fuels	APEREC: to apply economy's efforts to take the place of carbon intensive fuel portfolio through including the share of renewable and nuclear energy into total primary energy supply	
9	Market liquidity	Market's capacity to deal with fluctuations in supply and demand; IEA's definition: "the exponential function of the ratio of a country's consumption over the total of that fuel available on the market"; Stock markets: a coefficient of elasticity of trading (CET) to indicate "the relative change in trading volume over the relative change in price." ²⁷	
10	Demand-side indicators	Related to the size of impacts of energy shortages and the dependence of economies for energy, such as the energy or fuel intensity of the economy. Energy expenditures is relevant as well.	High energy expenditures does not necessarily mean great difficulties in energy supply, but more related to affordability. Therefore, monitoring expenditures vis-à-vis income measures and identification in various energy sectors is recommended.

²⁶ Kruyt et al. 2009: 2169

²⁷ Kruyt et al. 2009: 2170

Aggregated Indicators/Indices			
		Definition/Format	Remarks
1	Shannon index based	Diversification of energy sources in energy supply (I_1); Diversification of imports with respect to imported energy sources (I_2); Long-term political stability in import regions (I_3); The resource base in regions of origin, including the home region itself (I_4) ²⁸	Supplies with higher political stability are given more weight; resource depletion index for exporting regions is included; balance between different elements is missing; the accessibility element of import diversity might not be always relevant.
2	IEAs energy security index	a. Energy Security Market Concentration (ESMC): based on Herfindhal-Hirschman Index (HHI) , countries, with private companies arguably, are seen as market participants and can ultimately control their natural resource exploitation level, hence country level approach suits analysis best. ²⁹ A modification for political stability (ESMC _{pol}) and 2 World Bank Governance Indicators ³⁰ are also included. b. Energy Security Index price (ESI _{price}), sums the products of ESMC _{pol} and is based on measuring the exposure of market concentration levels in each fossil fuel market: more exposure to higher concentration markets will reduce the security level of the country. ³¹	The objectivity of the balance between the parameters for supply and concentration is doubted, and dynamics of other aspects could be missing.
3	S/D index	Review and assessment covering final energy demand, energy conversion and transport and primary energy sources (PES) supply in the medium to long term. Weights that determine the relative contribution of the different components in the Index and the scoring rules for determining various Index values reflect different degrees of perceived vulnerabilities. ³²	With four types of inputs (shares, values, weights and scoring rules), two objective types and two types of a more subjective nature designed for the EU states and region, the whole energy spectrum is to be grasped. ³³

²⁸ For more detailed mathematical calculation, see Jansen et al. 2004: 21-25

²⁹ IEA 2007: 54. For more detailed mathematical calculation, see IEA 2007: 55-56

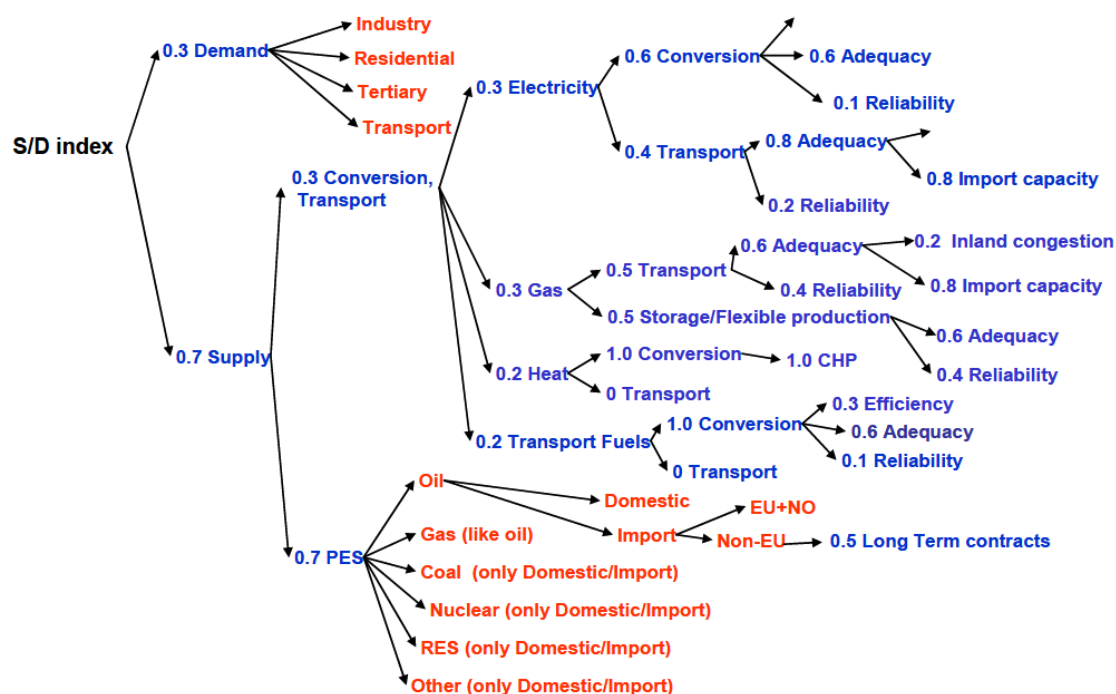
³⁰ See footnote 15.

³¹ IEA 2007: 62

³² Scheepers et al. 2007: 8. See below the weights (defaults) and shares used in the S/D Index Model Structure from Scheepers et al. 2007: 31

4	Willingness to pay	Due to high import quotes, high shares of oil and gas in total primary energy supply and high energy intensities, the willingness of a country to spend from GDP percentages is higher for the risks of energy security.	Only one unique calibration is applied, and further, multiple calibrations could be allowed.
5	Oil vulnerability index (OVI)	Seven indicators: (1) the ratio of value of oil imports to GDP; (2) oil consumption per unit of GDP; (3) GDP per capita; (4) oil share in total energy supply; (5) ratio of domestic reserves to oil consumption; (6) exposure to geopolitical oil supply concentration risks as measured by net oil import dependence, diversification of supply sources, political risk in oil-supplying countries, and (7) market liquidity are combined with the weighting system based on principal component analysis (PCA) to produce overall index.	Statistical variance of PCA may lead to concerns on robustness of results.

However, the 4 As framework is not completely unchallenged. One of the criticisms is that in the classic energy security studies, the implicit reference to the object of security, typically oil-importing industrial nations and in some cases other entities as well, might have been already shown the tendencies to include all the actors along the chain of energy system ranging from



³³ Ibid.: 31

global production networks to a variety of energy resources and carriers, as well as individual utilities and customers. This shift is to some extent, not timely nor sufficiently reflected through explicitly modifying 4 As approaches, which results in distinct priorities of different actors remaining blurred.³⁴

Moreover, the absence of social value judgment and the provision of a framework for identifying, measuring and managing risks and vulnerabilities could also be missed in the review.³⁵ The concept of risk and resilience is the core dimension being addressed in many short-term models. For instance, with the IEA Model of Short-term Energy Security (MOSES), external and domestic risk and resilience are categorized, weighted and calculated by indicators on each single primary resource and secondary fuel, after which country portfolios could be established and grouped into clusters based on their overall risk exposure and resilience capacities.³⁶

	Risk	Resilience
External	External risks: risks associated with potential disruptions of energy imports.	External Resilience: ability to respond to disruptions of energy imports by substituting with other suppliers and supply routes.
Domestic	Domestic risks: risks arising in connection with domestic production and transformation of energy.	Domestic Resilience: domestic ability to respond to disruptions in energy supply such as fuel stocks.

Dimensions of energy security addressed in MOSES³⁷

³⁴ Ibid.: 417

³⁵ Ibid.: 418

³⁶ Jewell 2011: 11-12

³⁷ Ibid.: 10

3. Quantitative Evaluation of Energy Security: Current EU Practice

3.1 Country-Specific Supplier Concentration Indexes (SCI) on Diversification

As one of the basic instruments to promote national and regional security of supply, the exposure of Member States to external sources and the diversification of supplies is measured in the in-depth study of European Energy Security Strategy through employing Country-Specific Supplier Concentration Indexes (SCI) mathematically based on the Herfindahl-Hirschmann Index (HHI). The HHI, which is also shared to construct the foundation of IEAs Energy Security Market Concentration (ESMC) Index, helps to compute the net positive imports from single supplier to individual EU Member States and the gross domestic consumption of specific energy sources (natural gas, crude oil and coal for instance) in the importing country. Total country imports including energy flow inside EU and/or outside from non-EU suppliers, and imports originating from outside of EEA (in this case Norway is special circumstance as it is the only significant EEA oil and gas exporter to EU) are also calculated. Countries with higher value of SCI evaluated are indicated to have less diversification and therefore higher risk.³⁸ The EU-28 SCI for fossil fuel import from supplier outside of EEA in the 2030 Climate and Energy Strategy drafting period from 2010-2012 are listed as below:³⁹

	Country-diversification index (extra EEA trade) 2010-2012								
	Crude Oil			Natural Gas			Other Bituminous Coal		
	2010	2011	2012	2010	2011	2012	2010	2011	2012
Austria	13.1	13.2	12.7	61.8	79.8	96.8	8.1	0.1	13.1
Belgium	21.8	24.8	21.0	7.8	14.6	1.6	20.3	35.6	18.5
Bulgaria	94.2	87.9	99.7	85.8	74.1	69.5	50.8	57.5	59.2
Cyprus	0.0	0.0	0.0						
Czech Republic	46.2	42.4	46.5	57.3	118.5	79.3	0.7	0.5	0.2
Germany	14.4	15.6	15.2	14.1	15.7	15.3	11.2	15.9	17.4
Denmark	0.1	0.2	0.0	0.0	0.0	0.0	10.3	39.7	27.1
Estonia				100.0	100.0	100.0	140.0	91.6	152.4
Greece	22.0	24.0	21.1	39.8	40.1	35.7	44.7	46.1	40.1
Spain	9.7	10.6	10.0	19.8	24.0	26.5	16.5	15.5	22.6
Finland	90.8	76.1	80.5	100.0	100.0	100.0	41.2	153.7	54.9
France	8.3	7.2	8.4	4.7	5.1	4.2	15.7	18.3	17.4
Croatia	39.2	43.7	32.6	10.4	0.0	0.0	47.0	43.9	33.6
Hungary	80.5	79.7	77.5	57.5	48.9	63.4	13.2	4.8	3.0

³⁸ See Commission Staff Working Document: In-depth study of European Energy Security. Accompanying the document Communication from the Commission to the Council and the European Parliament European Energy Security Strategy, COM(2014) 330 final, Part 4/5, pp. 146-147.

³⁹ Organised based on the Eurostat data, European Commission estimations from Ibid.: 151-153

Ireland	6.2	2.8	21.6	0.0	0.0	0.0	36.6	87.8	51.6
Italy	11.6	9.2	10.7	16.4	16.1	16.0	25.6	20.5	18.0
Lithuania	98.3	95.1	99.4	99.4	100.5	100.1	144.3	141.9	115.4
Luxembourg				6.9	6.9	6.8	100.0	100.0	100.0
Latvia				38.2	119.7	129.5	75.2	35.1	63.3
Malta									
Netherlands	12.6	12.4	12.3	0.5	0.2	0.4	146.6	310.7	202.9
Poland	85.5	81.8	87.4	38.8	41.4	34.7	1.3	1.7	1.0
Portugal	9.8	12.8	12.5	42.0	46.2	38.6	35.8	64.9	64.7
Romania	16.0	18.6	18.1	2.7	3.6	3.3			
Sweden	19.5	27.0	18.3	0.0	0.0	0.0	10.2	21.4	16.8
Slovenia				32.5	28.2	20.1	42.5	36.7	39.5
Slovakia	100.4	101.0	99.1	99.8	109.9	82.3	21.6	27.2	38.7
UK	0.6	1.0	2.5	2.2	6.5		6.4	11.3	15.3

The values from 40-70 with medium risk are marked in yellow and above 70 with high risk are in red. What could be read from the table is that first, for crude oil from 2010 to 2012, Bulgaria, Finland, Hungary, Lithuania, Poland and Slovakia had relatively less diversification of supplier and more risk with high SCI above 80, and Czech Republic and Croatia in some cases had also lower security level in diversification when compared with the other EU Member States. Second, the country diversification index of Austria, Bulgaria, Czech Republic, Estonia, Finland, Lithuania, Latvia and Slovakia continually remained at high level in these three years and kept importing natural gas from limited specific supplier, which made them more sensitive and less vulnerable in facing immediate disruption of energy supply without other elements intervening. Third, the high coal index of Estonia, Finland, Ireland, Lithuania, Luxembourg, Latvia and the Netherlands also indicates that these countries were being more dependent on the import from less diversified supplier outside of the EEA countries than the rest. The table illustrates that apart from Croatia, Romania and Slovenia, in the period of 2010 to 2012 almost all the rest states located along the eastern boarder of the European Union from Baltic to Balkan were relying on high concentration from specific energy supplies outside of EEA.

3.2 Energy Dependence Indicator (EDI) Based Assessment of Member States

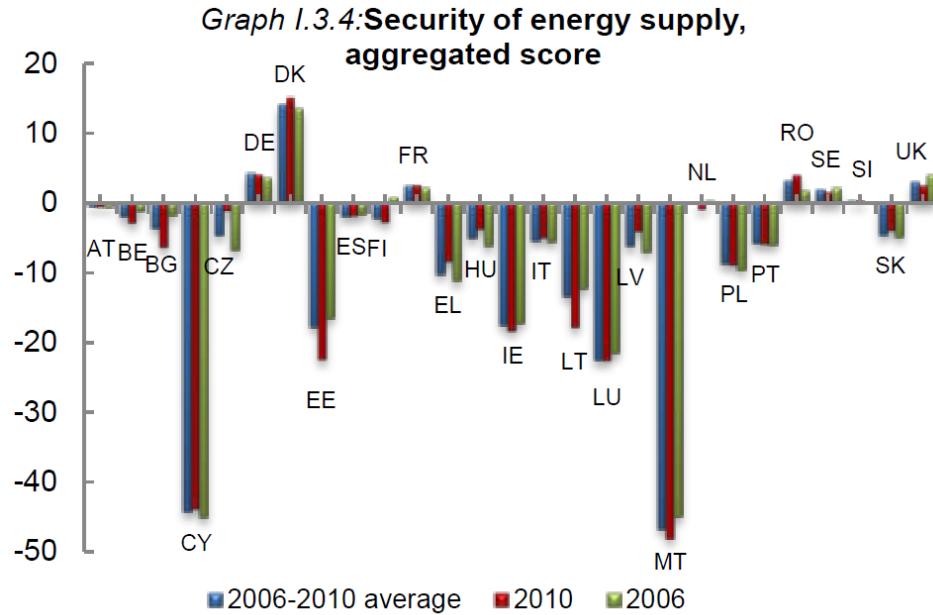
The in-depth study of European Energy Security Strategy also redirects to other on-going work of the European Commission services such as the indicator-based assessment of energy dependency of Member States. Energy Dependence Indicator (EDI) for individual EU Member States is a set of complicated and interdependent indicator combination interpreting security of energy supply, energy and carbon intensity of the economy, and contribution of energy products to trade balance. With the dimension of securing energy supply, definition of indicators are divided into primary sources and secondary sources. Primary sources include: 1) Import dependency, calculating the level of natural gas, crude oil, solid fuels and total of a country relying on imports for domestic consumption; 2) HHI energy imports, measuring the concentration degree of import sources relating to total imports; 3) Gross inland energy consumption by fuel, counting the share of each energy source in the sum of final inland consumption; and 4) HHI energy mix: reflecting the degree of concentration of Member States' energy mix. With secondary sources it refers to: 1) import dependency, highlighting electricity import dependency; 2) electricity mix, presenting the share of each energy source in a country's electricity generation; 3) HHI electricity mix, indicating to which extent energy sources in electricity generation in a given country is diversified.⁴⁰

Therefore in EDI energy import dependency, the degree of geographical diversification of energy import sources and the degree of diversification in the energy mix are measured as the three main indicators of security of energy supply for all energy products and electricity respectively. Together with the other two dimensions of energy intensity and trade balance, Member States' performance is assessed and compared through the aggregation method with composite indicator for each pillar with respective weighting, so as to develop a standardized and continuous scoring system.⁴¹ Being based on a finer differentiation of country performance given the diversity of national contexts, the country-specific outcome reflecting security of energy supply in the period from 2006 to 2010 reveals itself as the graph below:⁴²

⁴⁰ European Commission 2013: 53-55

⁴¹ Ibid.: 63

⁴² Ibid.: 26



See Annex 2 for the methodology of aggregate score. High score indicates good performance. Any score below -4 is a priori considered to represent underperformance; any score between +4 and -4 is a priori considered to represent a neutral performance; any score above +4 is a priori considered to represent over-performance.

Combining with the table of Country-diversification index in Ch.3.2, it can be interpreted that Malta shows the highest vulnerability among all the EU Member States investigated, fully dependent on imported energy without energy mix. Cyprus comes to the second most vulnerable country to supply risks due to its dependence almost completely on imported oil products (96% in energy mix and 99% in electricity generation), in the absence of domestic refinery facilities and interconnected electricity network. In the third place comes Luxemburg with nearly no domestic energy sources and little diversification of primary sources, followed by Ireland, who has one of the highest oil share in its energy mix and over 90% of oil products, solid fuels and gas imported (in the case of gas only imported from UK and only connected through a single point in Scotland). Furthermore, the aggregated scoring of Estonia also indicates its vulnerability due to no domestic production of gas, single energy import supplier and over-reliance on solid fuels. Lithuania is risking its energy security through relying on the imports of oil and solid fuels for above 95% and high concentration of energy sources from Russia, while Greece is entirely dependent on gas and oil import, and its coal import has to meet more than 90% of its coal needs.⁴³

⁴³ Ibid.: 26-27

3.3 European Gas Stress Tests

Concrete EU-wide analysis on security of energy supply based on common standards and adapted by specific scenarios was for the first time carried out in June 2014 when the Gas Stress Tests was requested to be launched by the European Council in line with the European Energy Security Strategy. The Stress Tests were proposed to assess the detailed impact of a possible disruption of gas supplies in EU member States and discuss how to minimize the potential negative impact under the simulation of two underlying scenario assumptions: a complete halt of the gas supply from Russia and a disruption of the Ukraine transit route. Participating countries were asked to simulate their security of supply in the hypothetical circumstances and report in details the applicable measures of preventing or mitigating possible national crisis with taking into the consideration in neighbor countries and cross-border effects.⁴⁴

Three focus groups of countries, namely South-East Europe (Greece, Bulgaria, Romania, Hungary and Croatia), Baltic States and the Energy Community Contracting Parties - Albania, Bosnia and Herzegovina, Kosovo, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine plus Georgia as an Accession Candidate - as well as G-7 non-EU states were invited to contribute to the Stress Tests.⁴⁵ The South-East-European (SEE) group were selected under the criteria of subsequent reliance on little diversified external suppliers and high vulnerability in the case of disruption of Russian supply and Ukrainian transit, common border and interconnection sharing, and hence open and constructive regional cooperation.⁴⁶

The impact of supply scenarios concerning Russian and Ukrainian disruption at the aggregate EU level is modelled by the European Network of Transmission System Operators for gas (ENTSOG) for periods of peak demand lasting one month, six months (September to February), and additionally a two-week "cold spell" in February after reshuffling the supply mix with the theoretical assumption that the use of infrastructure is maximized and the normal market

⁴⁴ See European Commission MEMO/14/593: Q&A on Gas Stress Tests, p.1.

⁴⁵ See Communication from the Commission to the European Parliament and the Council on the short term resilience of the European gas system - Preparedness for a possible disruption of supplies from the East during the fall and winter of 2014/2015, COM(2014) 654 final, p.1.

⁴⁶ See Commission Staff Working Document: Report on the findings of the South-East-European Focus Group, Accompanying the document Communication from the Commission to the European Parliament and the Council on the short term resilience of the European gas system. Preparedness for a possible disruption of supplies from the East during the fall and winter of 2014/2015, SWD(2014) 326 final, p.2.

conditions are maintained as usual. In the case of the six-month disruptions liquefied natural gas (LNG) is considered as the main replacement, in line with the changes in price, storage and demand to be taken in account as well.⁴⁷

6-month Russian disruption with 2-week February cold spell	BG	EE	FI	EL	HR	HU	IT	LT	LU	LV	PL	RO	SE	SI	BIH	MDA	SRB
Total shortfall BEFORE national measures (mcm)	843	204	2255	109	41	2170	26	693	8	39	890	1027	13	21	139	128	631
Largest relative monthly shortfall in %	76%	100%	100%	18%	12%	35%	0%	59%	5%	15%	28%	32%	6%	17%	100%	100%	64%

Missing gas volumes per affected country over 6-months period in Russian supply cut and cold spell scenario (total shortfall in mcm and largest relative monthly shortfall in %)⁴⁸

According to the simulation of ENTSOG, Bulgaria, Estonia, Finland and Lithuania would suffer most - serious supply shortfall of more than 40% - compared with relative monthly level in facing a 6-month Russian disruption before national measures come into intervention. The European Commission also made analysis for Member State governments about the potential timing to introduce non-market-based measures if Russian supply would stay halted for six months from September 2014, presented as the chart below.

In the scenario of six months without gas supply from Russia, among all the EU Member States Lithuania, Latvia, Estonia, Finland, Greece, Croatia and Slovenia would be not able to persist for even three weeks and need a very earlier engagement of assisting measures other than free market instruments to ensure supply to customers. This reacting timing could be delayed, however, if according to ENTSOG "cooperative scenario" calculations the burden of gas shortfalls can be relatively equally shared between neighbouring states in the principle of EU solidarity. The maps below showed the optimal (cooperative scenario) and sub-optimal (non-cooperative scenario) options in February at the end of the likely 6-month-long occurrence of Russian gas disruptions under average winter conditions, and during a cold spell, before further national measures relating to for instance demand response, obligatory switching are introduced.⁴⁹

⁴⁷ COM(2014) 654 final, p.2-4.

⁴⁸ ENTSOG modeling data quoted in *ibid.*: 5.

⁴⁹ *Ibid.*: 5-8, based on ENTSOG modeling data.

Scenario 6 month without Russian gas

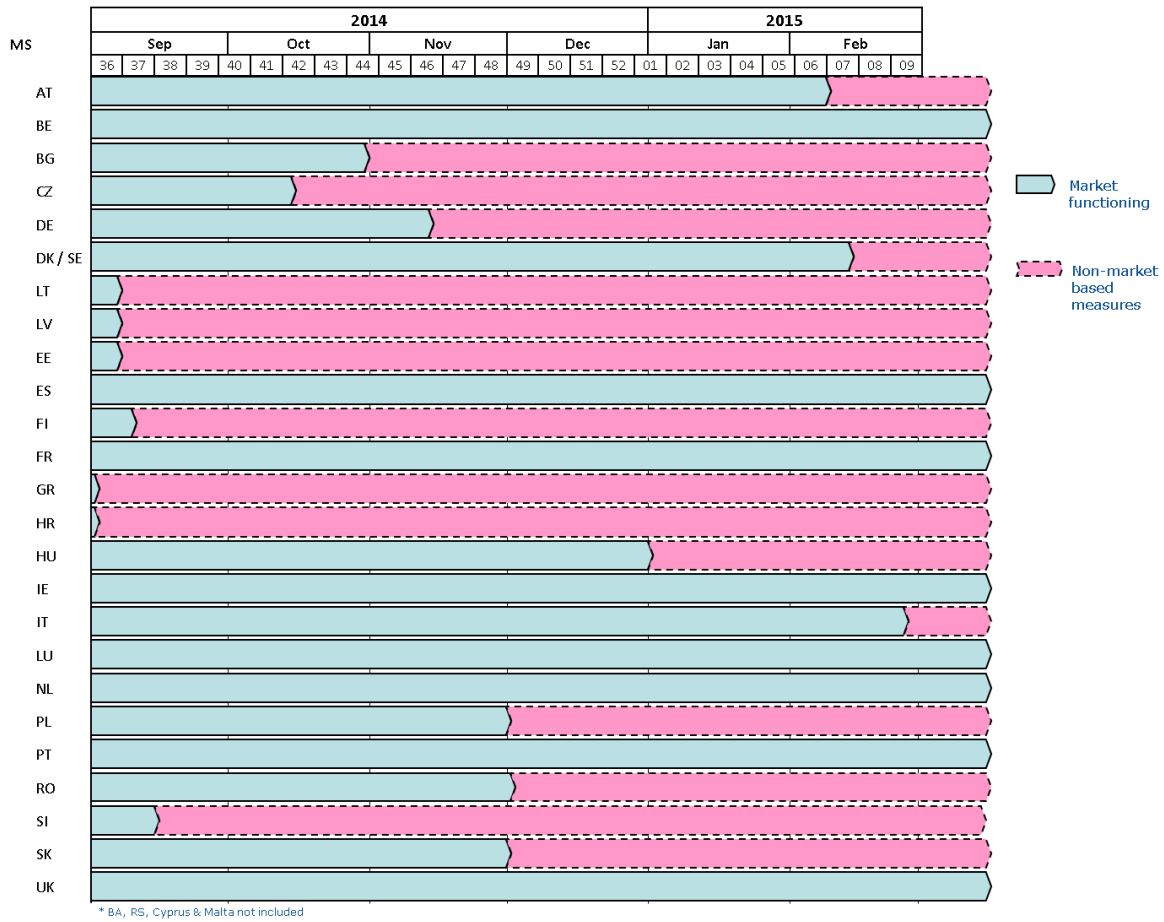
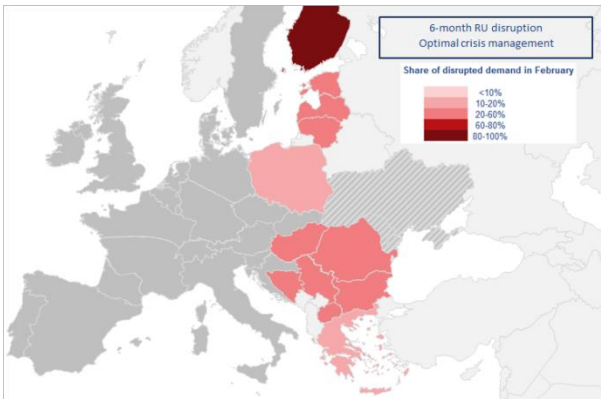
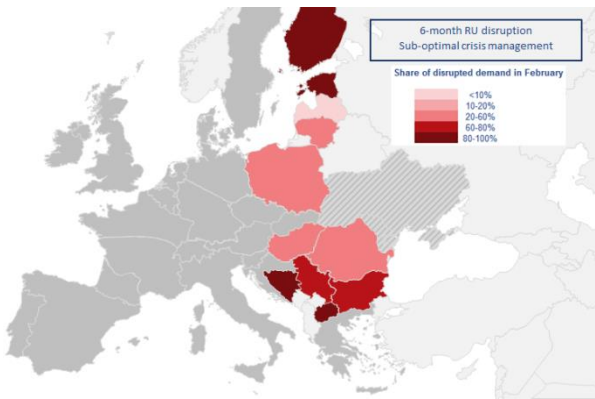


Chart of temporal introduction of national measures⁵⁰

Cooperative Scenario

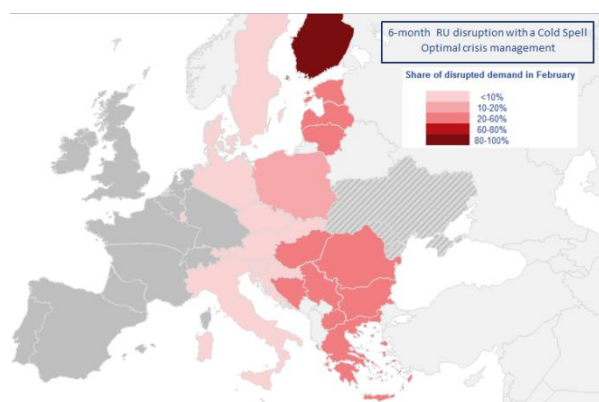


Non-cooperative scenario

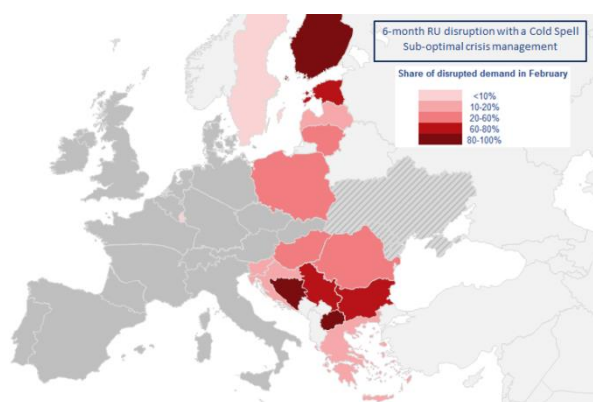


⁵⁰ Analyzed by the European Commission from national reports, *ibid.*: 15.

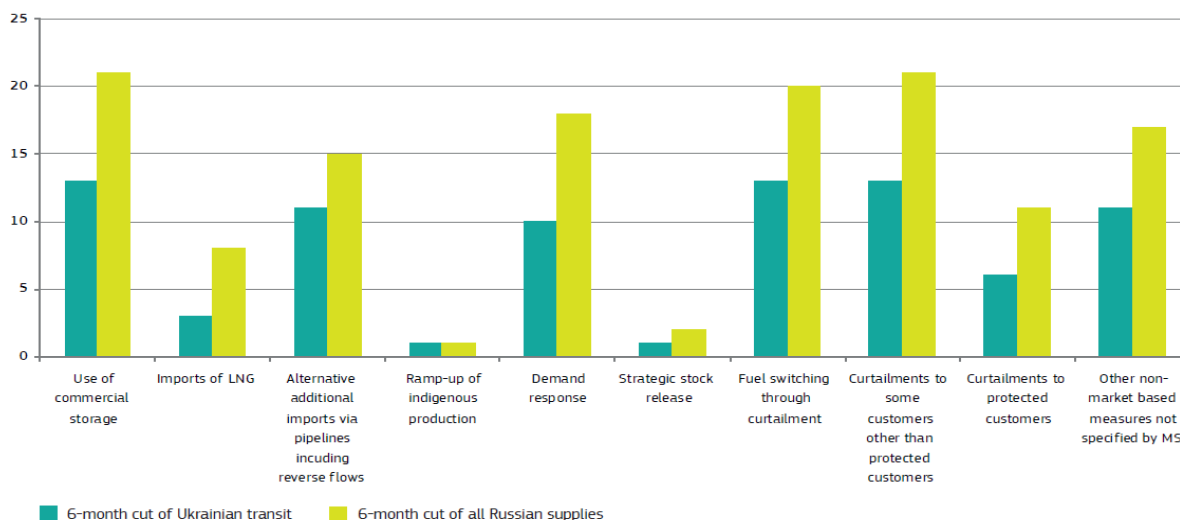
Cooperative Scenario



Non-cooperative scenario

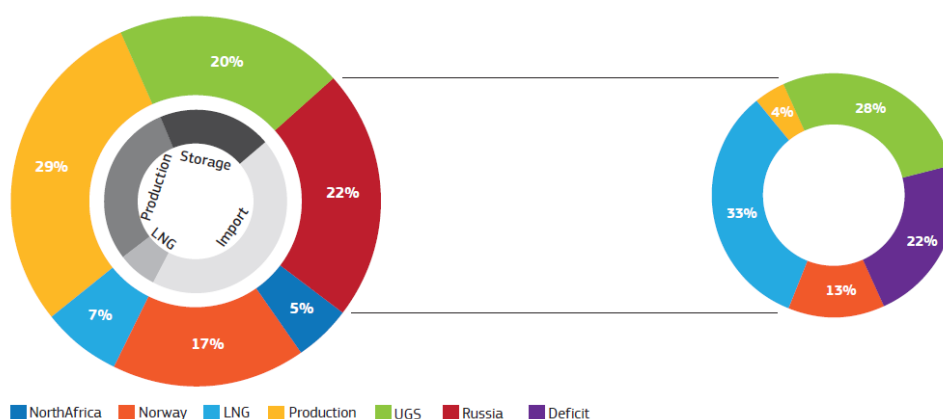


It is illustrated that the cooperative scenario could decrease the dramatic level of the most affected Balkan Energy Community countries and Baltic countries through gas flow via regional infrastructure networks - whilst Finland is an exception due to insufficient infrastructure interconnectedness and may have to turn to other specific national measures like switching in place for gas-fired power generation and heating units⁵¹ - which will in the cold spell scenario also influence the originally not affected Central Eastern and Western European Member States such as Austria, Czech Republic, (northern) Germany (the so-called NetConnect Germany market area), Italy and Slovakia previously shadowed in grey.



⁵¹ See Footnote 17, Ibid.: 7.

ENTSOE also pointed out that according to the information offered by national reports to the Stress Tests Member States would be differently affected by the Ukraine transit and Russian gas disruption, and correspondingly envisage different reacting strategies in line with their energy portfolio and geographical location. The column diagram above shows an overview the count of different measures suggested by Member States in the reports,⁵² among which storage is considered as one of the basic tool to balance energy supply and demand, and it is undoubtedly also important to find replacement for the missing volumes externally, such as increasing the amount of LNG that EU would purchase on the global energy market.



Replacement of Russian gas in the 6-month Russian supply disruption scenario⁵³

Another approach would be the reduction of gas demand resulting from price rising and switching to alternative fuels like oil and biomass, which could function automatically through economic regulating mechanisms. If the necessity to deploy more radical instruments emerges, the ultimate tool working at the demand-side in the hands of the authorities would be curtailment to specific user groups, in the sequence from industry to household families.⁵⁴

This chapter describes the three approaches EU has mentioned and undertaken in the framework of the 2030 Energy package and its following-up European Energy Security Strategy. SCI, EDI,

⁵²Ibid.: 10

⁵³ Ibid. It is also pointed out in original footnote here in COM(2014) 654 final that "the 22% total shortfall also includes the volumes not delivered via EU Member States to Turkey and Kaliningrad."

⁵⁴ Ibid.: 10-14

the Gas Stress Tests and their indicator components are, however, not selected randomly out of the many quantitative options, nor is it coincidence that all of them are aiming at states to be the simulated and investigated actor, and looking into national statistics and scenarios. Although the importance and relevance of many existing indicators introduced in Chapter Two was acknowledged, for example as stated in the Commission's indicator-based assessment on Member States' energy dependence, EU still does have limitations in choosing among them to quantify its energy security considering technical feasibility and political appropriation. Elements such as energy suppliers' political stability, the level of integration of a given country within the EU energy markets, the adequacy of interconnections into neighbor countries and entry points are considered better to be described than to be included into the set of indicators.⁵⁵

On the other hand, it could be noticed that these nation-oriented indicators investigating diversification, dependence and disruption of energy supply are more functioning as technical and consultative analysis for policy options and their outcomes rather than as potential pre-legislative instruments. This could partly explain why the index and indicators remain only supportive argument for better understanding the current EU energy security situation in the EESS but not entering the 2030 package headline targets: they are either observing and following Member States' existing economic behavior and data on the global energy market and EU policies already in practice, or inventing some measures that might quite test the fundamental capacity of the European regional energy infrastructure, and EU's solidarity and political will to voice and fight as one.

Hence the following chapter attempts to build the legislative and institutional arena on which the context of actor behaviour and discourses have been constructed, so as to further comprehend the hypothetical political will and discursive motivation mattering and standing behind.

⁵⁵ European Commission 2013: 12

4. Context of Energy Security in the EU Policy-Making

4.1 Security of Supply in the EU Energy Policy: Objectives and Measures in a Nutshell

Energy security has been always regarded as one of the highest priorities of the EU energy policy and combined with different objectives set for the energy sector in the past few decades. As the earliest milestones of the European energy industry, the *Treaty of Paris on European Coal and Steel Community* (ECSC) and the *Treaty of Rome on European Atomic Energy Community* (Euratom) from the 1950s were devised and served as social instrument and for political rational in establishing an integrated and regulated common European market for more accessibility, stability and resilience in energy supply.⁵⁶

However, ECSC and Euratom did not present a clear inclusion of oil, natural gas and renewable energy sectors in the Community Regulations.⁵⁷ Energy security in the Europe-wide dimension has been staying mainly at the level of national policy rather than being part of a functioning common mechanism, until the collapse of the Soviet Union proved to be a triggering turning point. Under the suggestion of the when Prime Minister of the Netherlands, in 1991 the European Energy Charter was concluded with the eastern European and former Soviet Union countries as the basic legally binding agreement to establish "a framework for international cooperation between European countries and other industrialized counties with the aim of developing the energy potential of central and Eastern European countries and of ensuring security of energy supply for the European Union."⁵⁸ Have been facing the new geopolitical situation, provisions on competition, transparency, sovereignty, taxation and environment were set out to avoid the imposition of discriminatory measures in accessing energy resources. The Charter, though to some extent did not fulfill sufficient success in attaining a multi-regional energy regime as limited energy producers and European states granted ratification, still could be considered as inspiring principles for the subsequent proposals and pointed out the direct link between the security of supply and an efficient energy market.⁵⁹

⁵⁶ Marin-Quemada et al. 2012: 196

⁵⁷ Ibid. For more clarification on the Community Regulation, see Chapter 4.3.

⁵⁸ See: European Energy Charter. Last time accessible on 01.12.2015 under: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l27028>.

⁵⁹ Marin-Quemada et al. 2012: 197

Market integration and liberalization between the Member States, and diversification of energy dependency in fossil and solid fuels to include nuclear and renewable energy remains as the major concern of EU on energy security.⁶⁰ A general policy framework was appealed to answer the rising urgency and status of the global climate change issue - which requires effective reduction of carbon consumption and emission - and the attention to the energy security scenario drawn by the EU eastern enlargement.⁶¹ Correspondingly, the European Commission presented the Green Paper *Towards a European Strategy for the Security of Energy Supply* in 2000, in which the reduction of the increasing dependence of imported energy supply is stressed and expected to be improved through balancing and diversifying energy sources.⁶² The philosophy to sketch out a long-term EU energy strategy lies in: 1. a clear action in favor of a demand policy; 2. using taxation measures to change the current consuming demand and behavior towards a more controlled and environment-friendly manner; 3. to develop new and renewable energies to fight against global warming; and 4. the reinforcement of technical progress.⁶³

The value of an integrated internal market and the necessary network of transport infrastructure is also well acknowledged in the Green Paper, and is agreed as the foundation to further shape inclusive and mutual benefits, and develop harmonized stance in European energy negotiations. The *New Guidelines for trans-European energy networks (TEN-E)* in 2006 therefore introduces the main lines of action, priorities and objectives in the area. The interconnection, interoperability and development of TEN-E for transporting electricity are recognized to play an essential role in the effective operation of the internal energy market, the security and diversification of supply, the better achievement of territorial cohesion in EU, the promotion of sustainable development particularly in renewables, and more efficient technologies.⁶⁴ Under the Guidelines projects to be developed are categorized into three boxes, namely projects of common interest (related to electricity and gas networks displaying potential economic viability), priority projects (presenting significant impact on the proper functioning of the internal market, security of supply and/or renewable energy) and projects of European interest (showing the

⁶⁰ See White Paper (1995): *An Energy Policy for the European Union*, presented by the Commission, COM(95) 682 final, 4.2.2 and 4.3.1.

⁶¹ Buchan 2010: 360

⁶² See Green Paper (2000): *Towards a European Strategy for the Security of Energy Supply*, COM/2000/0769 final.

⁶³ Ibid.

⁶⁴ See EU Guidelines: *Trans-European energy networks*.

significance of cross-border transmission capacity).⁶⁵ The Guidelines lays the emphasis on establishing internal market and reducing the isolation of marginal regions, but the proposal and the implementation of the projects was, nevertheless, to some extent estimated to suffer delays out of insufficient harmonization in planning and authorization processes, as well as funding difficulties.⁶⁶

Apart from the internal dimension of a better and more inclusive manner of policy implementation among Member States towards a single regional market, the security of energy supply in the EU also requires smooth and successful conversation and interaction between EU states and external energy supplies like OPEC countries and Russia. The *Energy Community Treaty* in 2006 is aiming at launching a regional market to encourage Balkan countries and United Nations to co-strengthen the legal binding cooperation for energy market between EU (East Central Europe) and South East Europe, West Balkan, as well as the Mediterranean states.⁶⁷ The EU initiatives of the Baltic Sea Region Energy Cooperation (BASREC), the Euro-Med for the Mediterranean countries, and the Baku Initiative for East European countries, the Caucasus and Central Asia should also be invited to be part of the application.⁶⁸

The ambitious proposal of EU to create an integrated internal market and necessary physical and quality infrastructure was devised to link energy security to the solidarity among the Member States through regulated economic and political instruments. Five objectives are identified to better ensure energy security from the internal perspective:

- reducing demand, increasing the use of competitive indigenous and renewable energy, and diversifying sources and routes of supply of imported energy;
- stimulating adequate investments to meet growing energy demand;
- adopting better measures and instruments to cope with emergencies;
- improving the conditions for European companies seeking access to global resources;
- making sure that all European citizens and business have access to energy.⁶⁹

⁶⁵ Ibid.

⁶⁶ Marin-Quemada et al. 2012: 198

⁶⁷ See Treaty Establishing The Energy Community (2006).

⁶⁸ Marin-Quemada et al. 2012: 199

⁶⁹ Ibid.

These elements, behind which the strategies of strengthening diversification and resilience of energy supply of EU as a whole are functioning as the main guiding mechanism, has been repeatedly highlighted in the policy documents EU proposed in the next decade, of which the necessity to develop a common and inclusive climate and energy programme was first of all raised onto the agenda because of the various findings having emerged from the actual implementation. Being erected based on the legal foundation of the 1992 *Maastricht Treaty of European Union* (TEU), in which Trans-European Networks was expected to be improved for better cross-border energy infrastructure,⁷⁰ it was for the first time agreed to develop a common European grid in the energy sector together as European Union at the informal European Council on 27 October 2005 at Hampton Court. Energy was considered as one of the two areas upon which more EU emphasis and regulation should be driven to improve the European economic competitiveness and to facilitate the integration of European internal market. A common approach to energy was highlighted in the discussions to better deliver concrete results of institutions and modernize EU policies.⁷¹

After years and decades having been addressed as business on the common market being established and in the area of environment, energy was understood as a new and specific chapter in the form of comprehensive policy framework pursued by EU mandate and included in the European primary law via the *Treaty on the Functioning of the European Union* (TFEU).⁷² The Article. 194 (1) on energy stresses a spirit of solidarity between Member States "in the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment"⁷³, and targets:

- (a) ensure the functioning of the energy market;
- (b) ensure security of energy supply in the Union;
- (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy;
- and (d) promote the interconnection of energy networks.

⁷⁰ Buchan 2010: 360

⁷¹ See the Press conference at EU informal summit Hampton Court on 27 October 2005 hosted by Tony Blair, when British Prime Minister and José Manuel Barroso, when President of the European Commission, with the leaders of the EU countries. Last time accessible on 15.11.2015 under: http://www.le.ac.uk/eg/hvdc/Link%20pages/News%20Items/Press%20conference_PM_%20Hampton%20Court.doc.

⁷² Braun 2011: 1

⁷³ See: Consolidated versions of the Treaty on European Union and the Treaty on the functioning of the European Union, Council of the European Union, Brussels, 15 April 2008, 6655/08.

The solidarity required among Member States particularly concerning the internal integrated market and environmental impacts, though being observed in lack of sufficient financial and diplomatic instruments thus remaining weak and entailing prominent shortcomings, still could be better assured through the inclusion of the energy-dedicated legal basis in the Treaty of Lisbon therefore "formalizing the shared ownership of EU energy policy between EU institutions and the member states."⁷⁴ The 4 targets listed to some extent declare the keynote and guideline for further development of EU energy packages in medium and long term - as beyond as into 2050 - namely internal market, security of energy supply, energy efficiency and renewable energy.

These elements were clearly stated in the EU 2020 and 2030 Climate and Energy Package, which both have raised concrete targets in cutting Greenhouse gas Emissions (from 1990 levels), promoting proportion of renewables in EU energy mix and improving energy efficiency. Different scenarios adopting quantitatively formed models were hypothesized and compared, and public opinion consultation was launched for a better understanding. The strategies were defined and oriented to achieve the EU 2050 low-carbon roadmap suggesting that the EU should have cut emissions to less than 80% of the 1990 levels and transit to a more climate-friendly and less energy-consuming economy step by step with contributing to all the sectors of power generation, building, industry, transport and agriculture.⁷⁵

The 2020 EU Climate and Energy Package was endorsed by the European Council in March 2007 and set the three key targets for cutting GHG emissions, RES and EE respectively for 20% each (the so-called 20-20-20 measures). The legislation was enacted in 2009.⁷⁶ The mainstays of energy security are identified by the Council in the 2020 package as:

- diversifying sources and routes of energy supply;
- developing more effective crisis response mechanisms;
- improving oil data transparency and reviewing EU oil supply infrastructures;

⁷⁴ Braun 2011: 2

⁷⁵ See: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Energy Roadmap 2050, COM(2011) 885 final.

⁷⁶ See: 2020 climate and energy package. Last time accessible on 06.12.2015 under: http://ec.europa.eu/clima/policies/strategies/2020/index_en.htm.

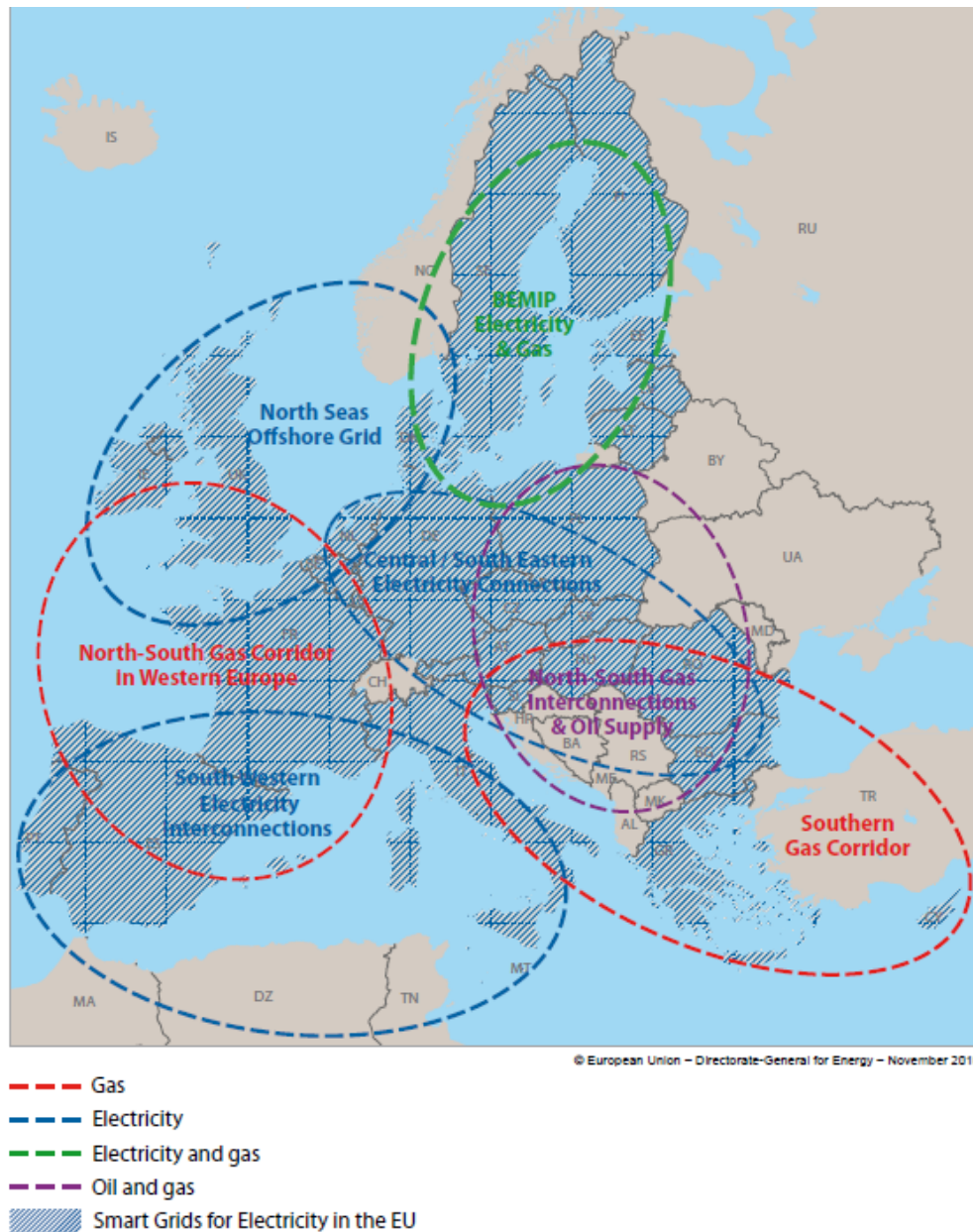
- a thorough analysis of the availability and costs of gas storage facilities in the EU;
- an assessment of the impact of current and potential energy imports and the conditions of related networks.⁷⁷

The priorities and actions of the 2020 package was further elaborated in the *EU Energy Security and Solidarity Action Plan* (2008), in which sustainability, competitiveness and security of supply is recognized as underlying objectives of EU's new energy policy, along with which infrastructure for diversification, external energy relations, storage of fossil fuels and crisis response mechanisms, energy efficiency, as well as indigenous energy resources become the focus to promote secure and coherent actions among stakeholders.⁷⁸ Though the 20-20-20 measures alone in the 2020 package does not meet EU's energy security needs explicitly, it is highlighted in the Action Plan to facilitate infrastructure essential to the energy needs of EU. Priority corridors for electricity, gas and oil are depicted in the *Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network* as below:⁷⁹

⁷⁷ Marin-Quemada et al. 2012: 200-201

⁷⁸ See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Second Strategic Energy Review: An EU Energy Security and Solidarity Action Plan, COM(2008) 781 final, p.3.

⁷⁹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network (2011), COM(2010) 677 final, p.22.



These priority corridors of gas, oil and electricity are considered as the "basis for future concession of permits and finance support by the EU to develop specific infrastructure projects."⁸⁰ The European Commission are pursuing rapid progress in the area with all the existing instruments, for instance requiring the support from the Energy Community and through projects under the TEN-E programme. A closer and more efficient cooperation with the private sector, financial institutions as well as public and private entities from the third countries is

⁸⁰ Marin-Quemada et al. 2012: 206

preferred at the national and the EU level in order to build a better Public-Private Relationship (PPP), which can provide necessary political underpinning and public financing or guarantees.⁸¹

With regard to EU's international energy relations, it is needed in many cases to develop trust and legally binding connections between EU and supply/transit countries in the long-term perspective. Collective weight needs to be strengthened in the interaction with producer countries for new kinds of broad-based partnerships. Based on the principles of the Energy Charter Treaty and contributing to the long-term risk-reducing political framework, a new generation of "energy interdependence" - a balance between security of demand and security of supply through encouraging upstream investments, necessary infrastructures, accurate conditions of access to markets, and conversation on policy developments and dispute settlement - is introduced into the provisions in broad-based agreements between EU and energy supply countries.⁸²

Moreover, it is also addressed in the Action Plan that to meet the energy security objectives, EU is also required to make the greatest efforts to ensure reliability and transparency with Member States in internal crisis mechanisms and security standards. An obligatory regime of energy resources storages in oil held by the government and/or industry has been requested in the various directives since the 1970s. Currently, EU has a revised version on the strategic oil stocks legislation, the Directive of the Council 2009/119/EC of 14 September 2009 *Imposing an Obligation on Member States to Maintain Minimum Stocks of Crude Oil and/or Petroleum Products*. It clarifies that "stockholding obligations and Community emergency stocks are calculated should be brought more into line with the calculation methods used under the IEA Agreement"⁸³, which means 90 days of net imports. Moreover, a oil stocks reporting system was developed and adopted unanimously by Member States to respond to the Directive requirements on emergency, commercial, specific stocks for streamlining "with the Energy Statistics Regulation and the existing IEA reporting system in order to keep Member States reporting burden low, and ensuring also a direct comparability of stockholding obligations/reported stock

⁸¹ COM(2008) 781 final, p.6.

⁸² Ibid.: 8

⁸³ See *Imposing an Obligation on Member States to Maintain Minimum Stocks of Crude Oil and/or Petroleum Products*, Directive 2009/119/EC (5).

values under the two systems (IEA and the EU Directive)."⁸⁴ Last but not least, publication is made on the stocks level for each Member State, and it is also proposed by the European Commission that further weekly publication on the level of commercial oil stocks is to be realized for the purpose of improving market transparency and putting limitation on the effects of uninformed speculation.⁸⁵

As for the publication on the level of strategic gas stocks for Member States, in the Action Plan it is admitted that legal framework could be improved particularly through greater harmonization of security of supply standards and emergency measures both at the regional and EU level. As gas stocks are much more costly than oil, a higher requirement on the promotion of development and transparency of commercial storages, as well as supply diversification for the EU internal market is expected to be fulfilled.⁸⁶ Concerning measures to safeguard security of gas supply, the Regulation (EU) No. 994/2010 of the European Parliament and of the Council of 20 October 2010 makes elaboration on the continuous gas supply to consumers, particularly in the cases of difficult climatic conditions and supply disruption - gas supplies to households and a range of protected customers for at least 30 days are obliged to be ensured. Considering unilateral measures developed by Member States to deal with risk might in some circumstance have a negative impact on the internal market and supply to the customers, as having been demonstrated in the past experience, solidarity and coordination in preventive action and response to the supply disruptions, plus diversification of supply routes and sources within the Member States and across the Union to connect isolated islands to the body system with corresponding investment and standards capacity building, are requested to be achieved not only at the Member States level, but at the EU level as well.⁸⁷ Correspondingly, the European Energy Programme for Recovery (EEPR) was initiated in 2010 to support the construction of gas infrastructure projects, reverse flow in 9 Member States and gas interconnectors with in total around EUR 2.77 billion.⁸⁸

⁸⁴ See: http://ec.europa.eu/eurostat/statistics-explained/index.php/European_energy_statistics_system, last time accessible on 18.11.2015.

⁸⁵ COM(2008) 781 final, p.10.

⁸⁶ Ibid.: 11

⁸⁷ See the Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply repealing Council Directive 2004/67/EC.

⁸⁸ European Commission 2013: 17

To sum up EU's priorities and action on the supply of energy up to the 2020 package, *European strategy for competitive, sustainable and secure energy for 2020* published at the end of 2010, in which the European strategy for competitive, sustainable and secure energy for 2020 is summarized as below:⁸⁹

Priority 1: Achieving an energy-efficient Europe

Action 1: Tapping into the biggest energy-saving potential — buildings and transport

Action 2: Reinforcing industrial competitiveness by making industry more efficient

Action 3: Reinforcing efficiency in energy supply

Action 4: Making the most of National Energy Efficiency Action Plans

Priority 2: Building a pan-European integrated energy market

Action 1: Timely and accurate implementation of the internal market legislation

Action 2: Establishing a blueprint of the European infrastructure for 2020-2030

Action 3: Streamlining permit procedures and market rules for infrastructure developments

Action 4: Providing the right financing framework

Priority 3: Empowering consumers and achieving the highest level of safety and security

Action 1: Making energy policy more consumer-friendly

Action 2: Continuous improvement in safety and security

Priority 4: Extending Europe's leadership in energy technology and innovation

Action 1: Implementing the SET Plan without delay

Action 2: The Commission will be launching four new large-scale European projects

Action 3: Ensuring long-term EU technological competitiveness

Priority 5: Strengthening the external dimension of the EU energy market

Action 1: Integrating energy markets and regulatory frameworks with our neighbors

Action 2: Establishing privileged partnerships with key partners

Action 3: Promoting the global role of the EU for a future of low-carbon energy

Action 4: Promoting legally binding nuclear-safety, security and non-proliferation standards worldwide

⁸⁹ See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Energy 2020: A strategy for competitive, sustainable and secure energy, COM(2010) 639 final.

4.2 The EU Energy Policy-Making Institution: The Ordinary Legislative Procedure

Being constituted by the heads of the Member States governments during occasional summits, the European Council does not show high competency and expertise in policy dossiers requiring comprehensive insights on technical complexity, such as energy.⁹⁰ Instead, according to the *Treaty of Lisbon*, the European Council "shall provide the Union with the necessary impetus for its development and shall define the general political directions and priorities thereof"⁹¹, and "identify the strategic interests and objectives of the Union"⁹².

Without the authority to exercise legislative functions, principally the President of the European Council (POTEC) is excluded from the energy-concerning legislative process, who, nevertheless, could initiate a thematic discussion with energy topic in non-legislative processes at the European Council and present the initiative to the Directorate-General for Energy (DG ENER) in the European Commission.⁹³

Serving both as secretariat and proto-executive in the EU organizational system, the European Commission exercises its responsibilities collectively with the President of the European Commission - who is elected under the *Treaty of Nice* (ToN) through obtaining qualified majority vote in the European Council and subject to the approval of the European Parliament - and other 27 Commissioners from each of the current EU Member States being responsible for one policy portfolio respectively. Commissioners are usually senior politicians or high officials nominated by member states, taking an oath to work independently for a five year term and having their own "cabinets" inside the house and externally to other institutions, including Member States.⁹⁴ The Commissioner of the Energy Union, currently Maroš Šefčovič since 1 November 2014, is the main focal point of EU energy policy proposing and implementing in the European Commission and takes the lead of the Project Team "A Resilient Energy Union with a Forward-Looking Climate Change Policy" to fulfill its duties in the energy-related infrastructure, legislation, business and investments targeting a promising development of energy security,

⁹⁰ Braun 2011: 4

⁹¹ See the *Treaty of Lisbon*, last time accessible on 16.11.2015 under: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012M/TXT&from=EN>

⁹² Ibid.

⁹³ Braun 2011: 4

⁹⁴ Wallace 2010: 70-71

renewable energy, energy efficiency and GHG emission for 2020 and 2030.⁹⁵ Another 13 European Commissioners in charge of internal market, climate action, regional policy, agriculture, transport, social affairs etc. are also part of the Project Team,⁹⁶ which shows clearly that the dimension of the climate and energy policy issue has transcended the mandate and responsibility of each single Commissioner.

The European Commission is relying on Directorate-General (DGs) as civil servant offering cross-EU expertise in specific areas of policy activities, and the complexity of the nowadays policy issues quite often also requires coordination between several DGs.⁹⁷ Reporting directly to the Commissioner for Energy Union and the Commissioner for Climate Action and Energy, DG ENER is responsible for "energy issues and the Task Force Energy which will be transferred from the External Relations DG".⁹⁸ However, it is also argued that regarding external dimension of energy policy, especially on those core European interests like the Southern Corridor and the Mediterranean Solar Plan, the Commissioner of Energy has more say than the High representative for the European Union in Foreign Affairs and Security Policy.⁹⁹ These would in some occasion also include DG ENER working and coordinating with the European External Action Service.¹⁰⁰

The European Parliament has currently 751 seats distributed into Members States according to their population and at the same time held by 7 European parting groups as well as non-attached members. It is the only directly elected EU body and decides on laws jointly with the Council of the European Union, which represents national governments of Member States.¹⁰¹ Members of

⁹⁵ See European Commission Vice-President (2014-2019), Maroš Šefčovič, Energy Union, last time accessible on 16.11.2015 under https://ec.europa.eu/commission/2014-2019/sefcovic_en.

⁹⁶ For a full list of the Commissioners in the Project Team see: http://ec.europa.eu/about/structure/index_en.htm#te, last time accessible on 16.11.2015.

⁹⁷ Wallace 2010: 71

⁹⁸ See Press Release: Commission creates two new Directorates-General for Energy and Climate Action, on 17 February 2010, last time accessible on 16.11.2015 under http://europa.eu/rapid/press-release_IP-10-164_en.htm?locale=en.

⁹⁹ Braun 2011: 5

¹⁰⁰ Ibid.

¹⁰¹ See: The European Parliament: The Citizens's voice in the EU, last time accessible on 17.11.2015 under: http://www.europarl.europa.eu/pdf/divers/EN_EP%20brochure.pdf

European Parliament (MEP) are from various background from national politicians to professionals.¹⁰²

The Council of the European Union was institutionalized both for collective functions and for Member States governments. Empowered to take decisions on topic within the EU mandate, National Ministers from each EU Member States meets regularly to discuss, develop and adopt EU law, and develop policies "on the subjects being discussed, and on how individual governments choose to be presented."¹⁰³ Ministers of EU countries taking charge of energy-related issues meet three or four times every year at the Transport, Telecommunications and Energy Council with the relevant European Commissioners for energy legislation.¹⁰⁴ National officials in the committees and working groups under the Council of the European Union, among which the Permanent Representation of EU Member States to the European Union are most important, are responsible for preparing meeting agendas.¹⁰⁵ About 250 working groups in the Council agrees 70% of the Council texts, Permanent Missions take over another 10-15%, which leaves only 10-15% really reaching the Ministers themselves.¹⁰⁶ The Council operates negotiation on proposals offered by the European Commission in details, and policy decisions come out from the interactions among the Commission, the Council and the Parliament - "the dynamics of the process rest on the way in which coalitions emerge within the Council and between the Council members of the other EU institutions."¹⁰⁷

The flow chart below shows after decisions and proposals have been passed inside the European Commission entirely, or at least by simple majority - which is rare - at its weekly meetings,¹⁰⁸ how will the ordinary legislative procedure continue to and go through the Council of the European Union and the European Parliament according to Article 294 of TFEU¹⁰⁹:

¹⁰² Wallace 2010: 82

¹⁰³ Ibid.: 75

¹⁰⁴ See: <http://www.consilium.europa.eu/en/council-eu/configurations/tte/>, last time accessible on 17.11.2015.

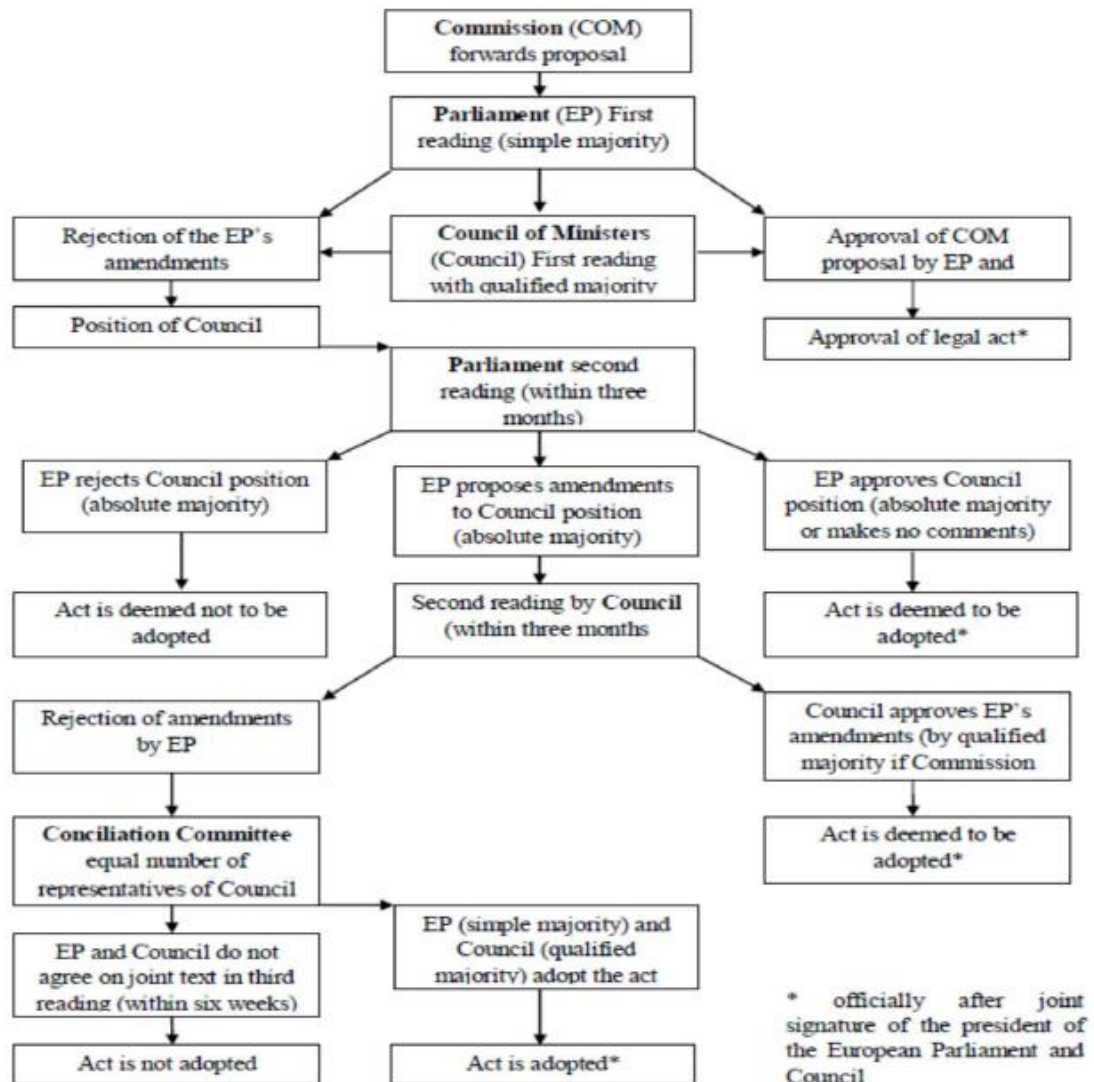
¹⁰⁵ Wallace 2010: 76

¹⁰⁶ Ibid.: 77

¹⁰⁷ Ibid.: 78

¹⁰⁸ Wallace 2010: 71

¹⁰⁹ DNR 2001: 21



TFEU defines to which policy areas this voting by qualified majority and the ordinary legislative procedure should be applied.¹¹⁰ In Article 194 of the TFEU, it is addressed that "without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary"¹¹¹, to realize the targets mentioned above regarding energy market, security of energy supply, energy efficiency and renewable forms of energy; as well as the

¹¹⁰ See: *Extension of voting by qualified majority and the ordinary legislative procedure*, last time accessible under on 30.11.2015 under: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:ai0015&from=EN>.

¹¹¹ See: *Consolidated versions of the Treaty on European Union and the Treaty on the functioning of the European Union*.

interconnection of energy.¹¹² It is also indicated that "such measures shall be adopted after consultation of the Economic and Social Committee and the Committee of the Regions,"¹¹³ which points out the concrete role of the civil society is empowered to play in the ordinary legislative procedure.

Established in 1958 under the Treaty of Rome, the Economic and Social Committee (ECSC) is a consultative body of the European Union bridging the EU official institution and organized civil society for the purpose of establishing solidarity and single market.¹¹⁴ ECSC was created according to the corporatist traditions as a point of access for the socio-economic groups to the policy process. In the past recent decades there has been an increasing trend of more activities of groups and lobbies representing societal interests, consumers, environmentalists, advocacy groups and NGOs involved in the process through ECSC, whose influences needs to be more illustrated and assessed.¹¹⁵

The Committee of the Regions (CoR) is created based on the Maastricht Treaty of the European Committee of the Regions. It acts as "the voice of regions and cities in the European Union" with 350 regional and locally elected representatives from the 28 EU countries. Environment, climate change, energy is one of the 6 policy areas that have commissions covering competences based on the EU Treaties.¹¹⁶ The members are offered a multilateral forum with opportunities to enhance their local political credibility and access to Brussels through lobbying by local and regional authorities to have impact on national policy positions and implementation of Community programmes.¹¹⁷ CoR together with ECSC were institutionalized to make sure that more voices from different actors and stakeholders from the multilevels vertically and horizontally could be heard during the EU policy designing process.

What could be read from the ordinary legislative procedure is that on the one hand, legislative directives/regulations and amendments in line with the energy strategies are created through the

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ See Europäischer Wirtschafts- und Sozialausschuss (EWSA), last time accessible on 30.11.2015 under <http://www.eesc.europa.eu/?i=portal.de.home>

¹¹⁵ Wallace 2010: 86-87

¹¹⁶ See CoR in a nut shell. Last time accessible on 08.12.2015 under: <http://cor.europa.eu/en/about/Pages/index.aspx>

¹¹⁷ Wallace 2010: 87

effective cooperation between the Council of European Union and the Parliament to, for instance, elaborate detailed requirements defining mandatory/voluntary quantitative targets for concerned parties,¹¹⁸ but on the other hand, it also needs to be born in mind that the Council belongs to the Member States' governments finally and works in the way that Member States prefer it to be. National policy are pursued at the arena of Brussels to represent and satisfy the will and interest of Minister's national governments, political parties and electorates. Consensus needs to be established through continuous negotiations and voting.¹¹⁹ Chalmers summarized the representation and interaction among the triangle of the Commission, the Council and the Parliament as below:

"The Commission serves a largely apolitical and technocratic function and presumably requires a large amount of technical, operational and expert information. The Parliament, as the EU's only elected supranational assembly, requires information that allows it to evaluate the Commission's proposals from a 'European perspective'. Finally, the Council is a wholly intergovernmental institution and carries out executive policy-making functions [and] requires information that can facilitate bargaining between member states."¹²⁰

¹¹⁸ See: *The common energy policy of the European Union*, last time accessible on 20.11.2015 under http://ec.europa.eu/eurostat/statistics-explained/index.php/European_energy_statistics_system.

¹¹⁹ Wallace 2010: 79

¹²⁰ Chalmers: 41 f.

5. The 2030 Common EU Climate and Energy Policy Framework

5.1 The 2030 Package So Far

The draft of the 2030 Climate and Energy Common Framework was triggered in late 2011: a quantitative assessment taking GHG emission, RES and EE as indicators started to update the new European Reference Scenario for the 2030 package. National Technical University of Athens, the International Institute for Applied Systems Analysis (IIASA) and Eurocare were contracted to model the scenarios by using PRIMES Model to analyze energy system and GHG emission, GAINS model for non-CO₂ emission, and GLOBIOM-G4M model for land use, land-use change and forestry (LULUCF).¹²¹

The European Commission organized two meetings with Member States' counterpart officials to have discussions on the 2030 Framework for climate policy (on 19 February 2013) and for energy policy (on 14 March 2013) before adopting the Green Paper of the 2030 framework on 27 March 2013. On the same day, a public consultation of all interested parties was opened immediately after the adoption, which lasted till 2 July 2013 and have received 557 contributions of reply. Meanwhile, a joint session of the Informal Energy and Environment councils with Member States' Ministers was organized on 23 April 2013, and a high-level conference was held on 19 June 2013 attended by stakeholders and Member States with more than 200 audience.¹²²

On the other hand, DG ENER, DG CLIMA and DG Mobility and Transport (DG MOVE) closely worked together with the Joint Research Centre's Institute for Environment and Sustainability in June 2013 for an updated version for the comprehensive Reference Scenario. Experts from Member States have also been consulted on the draft to make sure that state-specific results were of appropriateness and quality.¹²³ In April 2013, the preparations of the Impact Assessment (IA) for the 2030 framework was initiated based on the EU Reference Scenario and steered by an interservice group (ISG). The necessary resources and higher quality

¹²¹ See: Commission Staff Working Document Impact Assessment. Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A policy framework for climate and energy in the period from 2020 up to 2030, SWD (2014) 15 final, p. 9-11.

¹²² Ibid.: 9-10

¹²³ Ibid.: 11

information used by the European Commission in the IA for legal proposals comes from the Energy statistics system, which is constructed essentially on the legally binding obligation - Energy Statistics Regulation.¹²⁴ In the case of 2030 package, ISG met 4 times from May to September 2013 to prepare the IA, which was finalized and submitted to on 24 October 2013 to Impact Assessment Board (IAB). After several hearings and revisions, the IA received a positive opinion from IAB on January 2014. During the whole procedure the leading DGs were DG of Climate Action (CLIMA) and DG ENER.¹²⁵

The European Council expressed welcome to the Green Paper on 22 May 2013. With the inputs of a series of public policy debates in March and June 2014, the 2030 Climate and Energy Framework was agreed by the EU leaders at the European Council on 24 October 2014. The conclusion identifying the major issues and reflecting the main results of the discussions needs to be presented to the Council of the European Union and the European Parliament as co-legislators.¹²⁶ Therefore after a further policy debate on the new governance process and key energy indicators by the Ministers on 9 December 2014, the European Commission initiate the legislative proposals for implementation at the end of February 2015, before which a non-legislative resolution on the 2030 framework has already been adopted by the European Parliament on 5 February 2014.¹²⁷

The 2030 Climate and Energy framework is designed built on the 2020 climate and energy package in line with the EU 2050 Energy Strategy Roadmap and the EU 2011 White Paper towards a competitive and resource efficient transport system to a Single European Transport Area. The 2030 strategy aims to at least 40% cuts in GHG compared to 1990 levels, 27% share for RES and 27% improvement in EE by the year 2030. Moreover, the impact of the 2030 package on the social, scientific and financial aspects is also emphasized through bringing new

¹²⁴ See: The common energy policy of the European Union, last time accessible on 20.11.2015 under http://ec.europa.eu/eurostat/statistics-explained/index.php/European_energy_statistics_system.

¹²⁵ Ibid, p. 9-12.

¹²⁶ See: The European Council: The strategic body of the EU, p. 3. Last time accessible on 17.11.2015 under: <http://www.consilium.europa.eu/en/documents-publications/publications/2015/european-council-strategic-body-of-eu/>.

¹²⁷ See: <http://www.consilium.europa.eu/en/policies/climate-change/2030-climate-and-energy-framework/>, last time accessible on 17.11.2015

job opportunities, environmental and health benefits, research, innovation and competitiveness, and investments etc. into the consideration.¹²⁸

One of the major instruments which is newly institutionalized to support the transparent and dynamic governance system in an efficient and coherent manner is a resilient Energy Union,¹²⁹ which envisages to deliver commitment to such as interconnection communication, ETS, energy consumer empowerment and Eco-design Directive.¹³⁰ The Energy Union was launched by the European Commission in February 2015 out of the suggestion of the President of the European Council (Donald Tusk, Prime Minister of Poland) and concluded by the European Council on 19 March 2015. In the press release of the establishment of the Energy Union on 25 February 2015, the solidarity clause of the Energy Union was depicted as "reducing the dependence on single suppliers and fully relying on their neighbours, especially when confronted with energy supply disruptions. With more transparency when EU countries make deals to buy energy or gas from countries outside the EU."¹³¹

This statement is in line with the Framework Strategy of the Energy Union published on the same day, which clearly points out that Energy Union is established on the European Energy Security Strategy¹³² set out by the Commission in March 2014. The Energy Union Package highlights the following four points in energy security, solidarity and trust:

- a. Diversifications of energy sources, suppliers and routes stand as crucial for the accessible and sustainable energy supplies to European citizens and companies at a competitive price. The Commission will motivate all available Community funding instruments and European financial institutions to resolve the issue of constructing new delivering

¹²⁸ See: 2030 climate & energy framework, last time accessible on 15.11.2015 under http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm

¹²⁹ Ibid.

¹³⁰ See: Energy Union and Climate change policy - One year on, last time accessible on 15.11.2015 under http://ec.europa.eu/priorities/energy-union/docs/energy-union-1-year_en.pdf.

¹³¹ See the press release by the European Commission on Energy Union: secure, sustainable, competitive, affordable energy for every European, 25 February 2015 in Brussels. Last time accessible on 11.12.2015 under: http://europa.eu/rapid/press-release_IP-15-4497_en.htm

¹³² Part of the key points of the document has already been addressed in the Introduction.

infrastructure at the EU level. Domestic and unconventional energy sources should become alternatives to the high dependency on the import of oil and nuclear fuel;

- b. In this regard, cooperation between Member States, transmission system operators, energy industry and all other stakeholders is a must. Measures prepared by the Commission to deal with (potential) supply crisis include proposing preventive and emergency plans at the regional and EU level, voluntary demand aggregation mechanisms for collective gas purchasing during crisis, and EU-wide energy security assessment based on fact;
- c. Moreover, the Energy Union is seeking to promote a more competitive and transparent global energy market through trade policy attempting to include energy-related provisions in trade agreements with its partners. Energy security and diversification would be the priorities during the negotiation for an active trade and investment agenda in the energy field;
- d. The Commission needs to be fully informed on the compliance of Intergovernmental Agreements on energy purchase from an early stage.¹³³

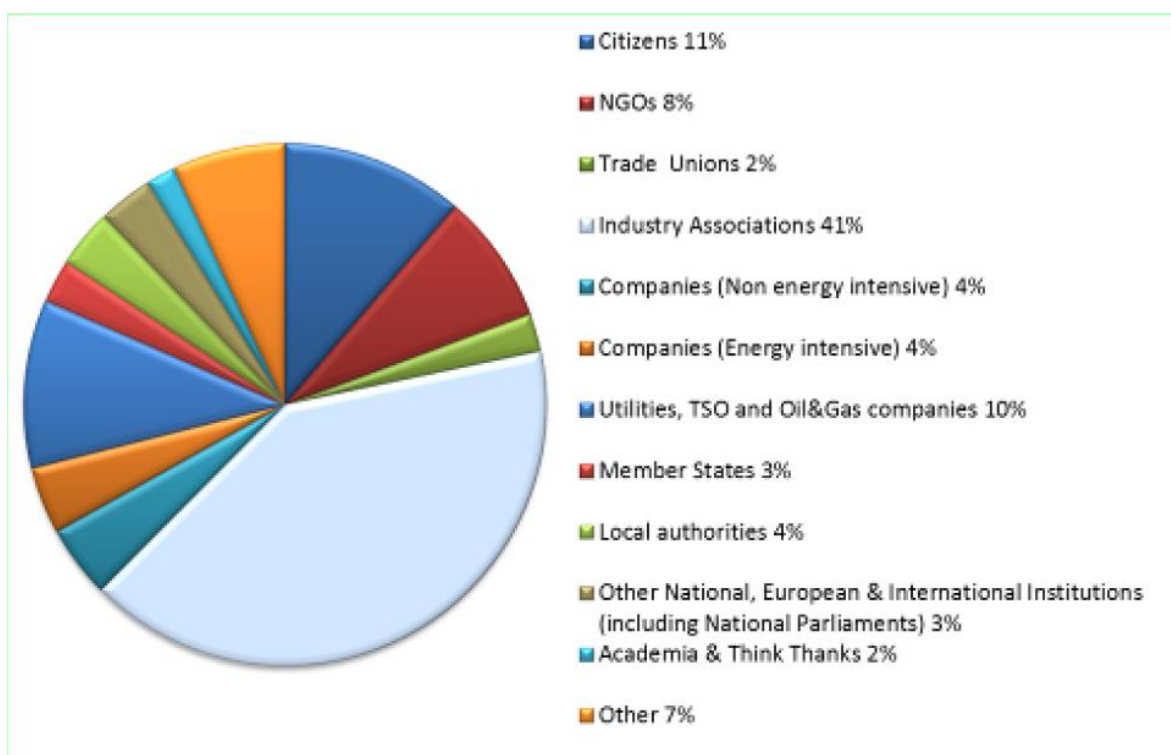
DG for Energy Union described 2016 as a year of delivery in the press release on 11 November 2015 - one year after the Energy Union came into the public view.¹³⁴ On the same day, the Commission also published a report on the state of the Energy Union assessing the implementation of the European Energy Security Strategy in the period of November 2014-2015, the long-term principle of which on energy security has been already discussed in the Introduction.

¹³³ The four points are summarized from the Energy Union Package - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy (2015), COM(2015) 80 final, p.4-7.

¹³⁴ See the press release by the European Commission: The Energy Union on track to deliver on 18 November 2015 in Brussels. Last time accessible on 11.12.2015 under: http://europa.eu/rapid/press-release_IP-15-6105_en.htm.

5.2 Energy Security in the Public Consultation for 2030 Framework: Member States

After the adoption of the Green Paper of the 2030 Climate and Energy Policy Framework, the public consultation took place from March to July to allow a wide range of stakeholders including public sector (Member States, national parliaments, and regional and local authorities), private sector and civil society (representatives from non-governmental organizations (NGOs), trade unions, business and consumer organizations, academia and citizens) to express their views to the on-going debate, and offer evidence and insights to support the development of the 2030 package. In total 557 replies have been received. The consultation ran in parallel with other discussing events organized by the Commission inviting high level stakeholders from international institutions, NGOs and academia, as also part of the public opinion collection.¹³⁵



Stakeholders profiles based on 557 replies received¹³⁶

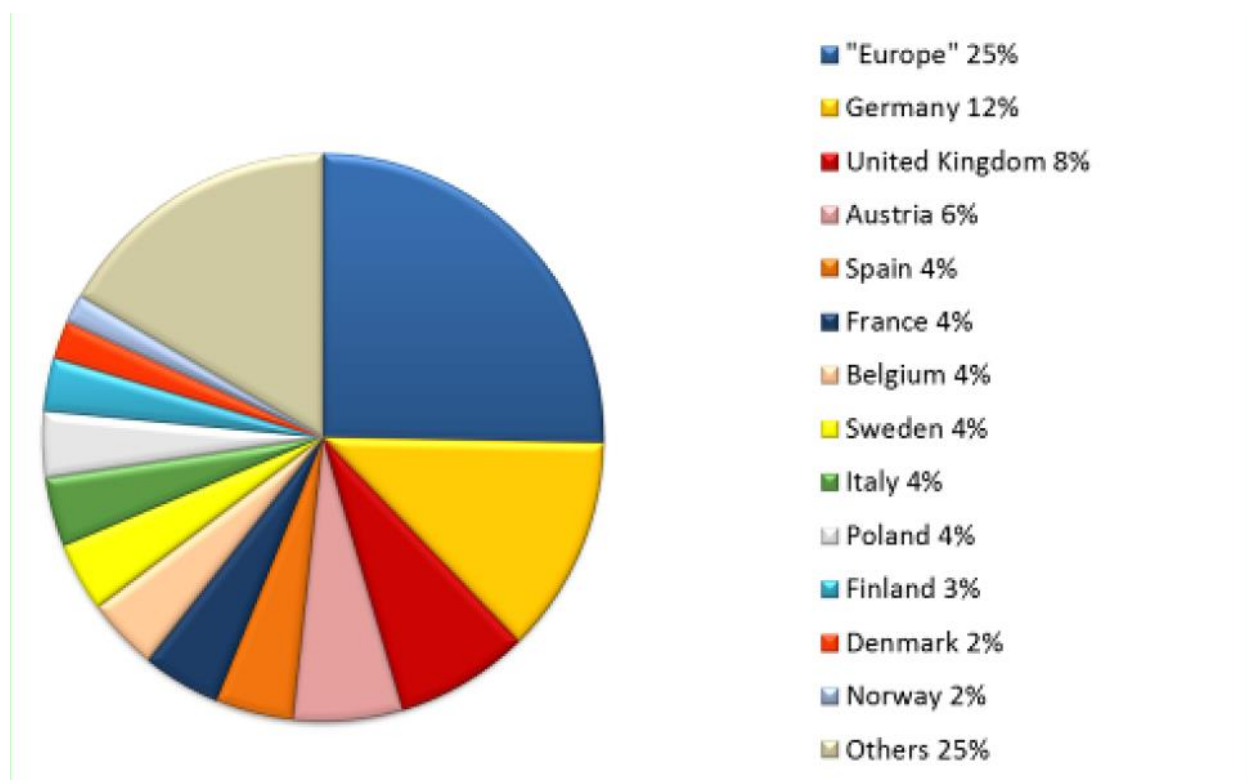
Around 40% of the total replies came from industrial associations, with another 8% together from energy intensive and non-intensive companies, and 10% from energy utilities, TSO and

¹³⁵ See Summary report on the analysis of the debate on the green paper "A 2030 framework for climate and energy policies", p.199-200 in the Commission Staff Working Document Impact Assessment - Accompanying the document: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A policy framework for climate and energy in the period from 2020 up to 2030.

¹³⁶ Ibid.: 201

Oil&Gas companies. Civil society also made strong contribution with 23% in total, including 8% from European environmental organizations and 11% from citizens respectively. 15 Member States' governments presented official position paper, and another 7% of the replies was also submitted by public sectors.

Geographically, one-fourth of the repliers held "European" label or identification, which is the highest portion among all. Besides, actors from EU power countries registered also good participation. Geographical distribution of the 557 stakeholders is demonstrated as below:¹³⁷



The questionnaire of the online based public consultation was designed into five main themes: which lessons that could be learned from the 2020 framework and the present EU energy system; the most effective 2030 targets in driving the objectives of climate and energy policy; changes necessary to policy instruments and way of their interaction with one another both at the EU and national levels; elements that could be strengthened to better promote competitiveness and security of supply, and equitable distribution of effort among Member States.¹³⁸ Within the five

¹³⁷ Ibid.: 202

¹³⁸ Ibid.: 199

areas, terms of GHG reduction, energy efficiency and renewable energy, internal market, competitiveness and energy security intertwine with each other and become mutual impacting factors, so that it is less than wise to pick out single concept to do isolated research. For instance, in all the questions that literally addresses energy security, its assessment and relationship with the other targets is formulated as:

"How should progress be assessed for other aspects of EU energy policy, such as security of supply, which may not be captured by the headline targets?"

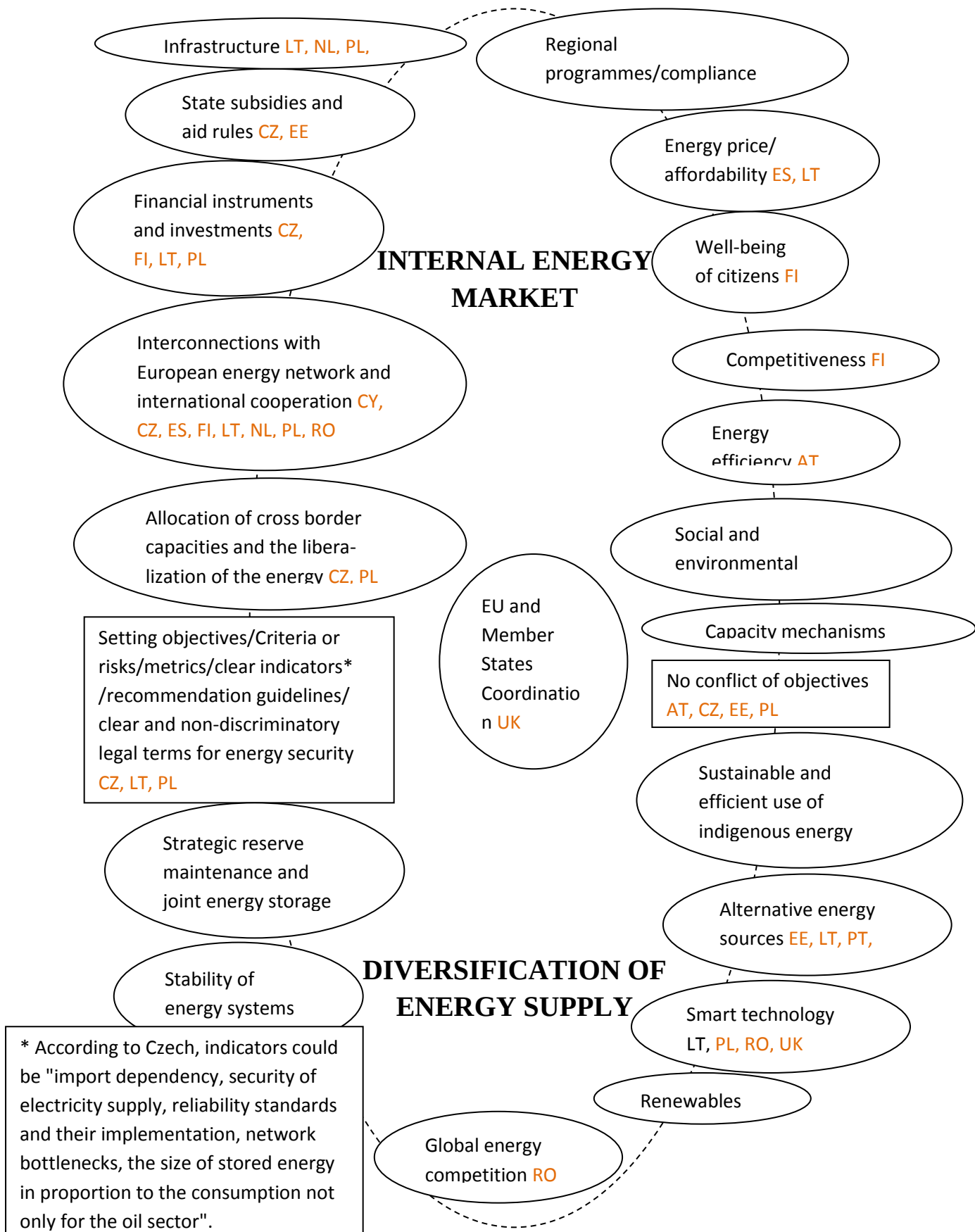
"How can the EU best improve security of energy supply internally by ensuring the full and effective functioning of the internal energy market (e.g. through the development of necessary interconnections), and externally by diversifying energy supply routes?"

The question, though, has clearly indicates internal energy market and diversification of supplies as the two main instruments for improving supply security, (and simultaneously set limitations of the preferred direction of potential replies), stakeholders still gave various opinion based on their own of perception to identify the policy issue. To sum up, energy end-prices, level of market integration, reliance on indigenous energy resources/degree of energy self-sufficiency, diversification of energy imports and grid stability are considered as the major potential points in quantitatively estimating energy security.¹³⁹

15 Member States/national governments submitted response to questionnaire of the Green Paper: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Lithuania, the Netherlands, Poland, Portugal, Romania, Slovenia, Spain, and United Kingdom. In their replies, it is commonly agreed that to promote internal markets and corresponding infrastructure and facilities, as well to diversify the supply routes are the two most essential points in better improving energy security of EU in general. On the conflicts and/or compatibility of different objectives and the priority of them to come into the policy discussions, however, opinions of Member States diverged more. Therefore on the issues of whether renewables could become a promising alternative to fossil fuel, to which extent and via which approach Member States should facilitate a more effective and efficient coordination of cooperation at the EU level, and other concrete questions directly and indirectly referring to energy security, differentiation and convergence do

¹³⁹ Ibid.: 99.

exist at the same time, even in the same reply paper. The following opinion map attempts to summarize and code their arguments for a general overview:



"Interconnections with European energy network" is mostly welcomed in building an internal EU energy market, especially by those who are located geographically close to the periphery (in the East and in the South) of the European energy grid and on the routine of the pipeline connected to major transit and supply countries. The promotion on infrastructure networks and the necessary investment and financial instruments are therefore also highlighted for coordination and cooperation at the EU level, as to afford their improvements would be beyond the capacity of some single states or companies.

This argument could also partly explain why among all the countries having answered the public consultation, to set objectives were only requested by East Central European countries Czech Republic, Lithuania and Poland, though to which extent the regulation should be, in terms of potentially feasible objectives, criteria, metrics, clear indicators, recommendation guidelines, and/or clear and non-discriminatory legal terms for energy security, varies in their requests. (Czech even showed concrete possible indicators.) Besides, likely governmental intervention into the market so as to ensure the stability of energy system and energy prices, as well as strategic storage to response potential immediate disruption of energy supply are also part of some Baltic and Balkan countries' concerns. In line with the suggestion of strengthening transport infrastructure and infrastructure investment, they are considered as effective measures to raise resilience when facing energy crisis.

The purpose of diversification also invites alternative energy sources, which could be developed through a better employment of indigenous energy consumption with more social and environmental sustainability and efficiency, plus more effective engagement of advanced technology to come into the practice in order to reduce dependence on external oil and gas sources. With regard to the potential energy form options, however, Member States remains restrained on a large scale of commitment of renewable energy.

Last but not least, among all the states having replied, Czech Republic, Lithuania, Poland and UK made the most effort in expressing their ideas with long and detailed argumentation, while reply paper of some important stake holding countries, such as Belgium, Germany, Greece and Italy could not be found after all.

5.3 Community Method, Union Method or/and Open Method of Coordination?

After having reviewed the EU legislative procedure of energy policy deciding and its reflection in 2030 Strategy framework, now the modes of policy making - how does who do what - need to be surveyed. It is, however, more than difficult, maybe also incautious to classify the ways of EU to make decisions into single and excluding categories, especially when investigating the complex energy issues. Though according to the Article 294 of the Treaty TFEU, the application of the ordinary legislative procedure is generally combined with the Community method,¹⁴⁰ a multi-methodological balance is often applied in practice for the reason of policy making efficiency and the different level of readiness of Member States to accept EU-range coherent policies made in Brussels.¹⁴¹

Moreover, the theoretical classification of the modes of EU policy making *per se* does not always present as self-explanatory. The behavior of categorizing shows already preference, and there is no clear logical correlation between the mode and the nature, as well as the contents of policy and the method that is supposed to be applied to them. Many policy designs show a mixture of various and evolving policy making modes.¹⁴² Therefore the interpretation of the energy security policy from the perspective of the Community Method, though has been to some extent pre-eminent according to the TFEU, but is not exclusive provided that a wider range of actors playing on the field during the policy process could be taken into consideration.

Initially the Community Method was designed to balance the weight between the Council of the European Union consisting of Member States' Ministers with the authority of decision making, the Commission of civil servants with the duty of initiating, and the MEPs from European parties under qualified majority voting (QMV) system with equality principle.¹⁴³ It is characterized by:

- the sole right of the European Commission to initiate legislation;
- the co-decision power between the Council and the European Parliament, and

¹⁴⁰ See *Community and intergovernmental methods*. Last time accessible on 30.11.2015 under: http://eur-lex.europa.eu/summary/glossary/community_intergovernmental_methods.html.

¹⁴¹ Nugnet and Buonanno 2013: 119

¹⁴² Ibid.: 119

¹⁴³ Ibid.: 123

- the use of qualified majority voting in Council.¹⁴⁴

The legislative steps that the 2030 package has been and is undergoing now, as presented in Ch. 5.1, clearly proves that it is following the ordinary legislative procedure therefore probably the Community Method, in practice and in theory. However, it is also argued that one of the most problematic characteristics of the Community Method is that from the point of view of Member States, when the method is applied, it could be uncertain for them to have the full control due to the varying level of trust between the Member States governments and different understanding of interests and priorities.¹⁴⁵ It is a huge challenge to present a positive assessment on EU's spirit of solidarity, let alone to include it into a quantified model to build a clear and effective target for EU common energy security - if it is not unfeasible at all. EU themselves did realize the problem in the working document of 2030 package:

"targets should only be set for areas where concrete policies to achieve them are conceivable Due to the international dimension of both competitiveness and security of supply (e.g. price differentials, import diversification), and the heterogeneous approaches and concerns of Member States in relation to these objectives, simple but comprehensive targets at the EU level, progress on which could be ensured through concrete EU policies, are not easily conceivable."¹⁴⁶

This dilemma both in the domestic and the international energy designing, somehow, illustrates the theory of the liberal inter-governmentalism school on the European Union. From the perspective EU is considered as an international regime and the integration of EU is interpreted more as the product of the interests of sovereign Member-State governments and the majority coalition of these within the European Council. But this does not equally mean that Member States are the only working actors. The preferences of Member States, in this case, are assessed as issue-specifically shaped through bargaining with main societal interest groups, such as dominant national energy producers and consumers. EU policy outputs are thus resulted from

¹⁴⁴ See *Community and intergovernmental methods*. Last time accessible on 30.11.2015 under: http://eur-lex.europa.eu/summary/glossary/community_intergovernmental_methods.html.

¹⁴⁵ Nugnet and Buonanno 2013: 127

¹⁴⁶ See Commission Staff Working Document Impact Assessment - Accompanying the document: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A policy framework for climate and energy in the period from 2020 up to 2030, p. 98.

intergovernmental bargaining processes, while the prime concern for the governments is the future compliance with the substantive deals that have been reached.¹⁴⁷

It could be clearly read from the indicator simulations in Chapter 3, the introduction of the existing EU energy security policy making, and the position map of the 2030 reply paper that in the case of the absence of a powerful common EU energy security policy framework in detailed implementation, merely to propose the coordination of national policies in accordance with certain accepted principles will continue depending largely on the quality of Member States' regulatory, institutional and business structure. EU could challenge the opposition existing between the two extreme models of a completely common policy framework without exception and pure bilateral energy relation by taking advantage of EU's traditional advantage of integration, as a European opinion surely would mean much more than the accumulation of individual voices of all the Member States,¹⁴⁸ but this needs further and more determined structural changes, in all terms of legislation, institutionalization and thoughts.

Therefore on the one hand, past experience acknowledges that in the formal terms at least, the numerous EU energy security initiatives in the last decade did establish the foundation for significant Europeanization of the external dimensions of energy policy, and Member States attach such centralized commitments as a means for to pursue their own energy interests.¹⁴⁹ On the other side, however, the traditional exclusive declaration to deliver states and state-bound actors as the major operating mechanism is not always justified without question. Member States alone cannot afford to make optimal EU-wide choices.¹⁵⁰ The development of the internal market has brought more and more actors into the policy process, which is attempting to delimit the existing regulation and legislation belonging to government and the expansion of the policy sphere where the Community Method could be applied.¹⁵¹ The relevance of transnational and transdisciplinary issues like environment and energy also invites more stakeholders and actors with little or even no working experience in the state government to be consulted in the policy process, which expands the political participation vertically and horizontally. The inclusion of

¹⁴⁷ Wettestad 2012: 69

¹⁴⁸ Marin-Quemada et al. 2012: 234-235

¹⁴⁹ Youngs 2011: 42

¹⁵⁰ Marin-Quemada et al. 2012: 200

¹⁵¹ Ibid.: 128

regional and local public sector, private sector and civil society, though still standing around the Commission and the Council as the main players, could make the key characteristic of the policy process mode with less hierarchy and more openness.

Approach	Premises		
	Actors (who?)	Agency (what?)	Interests (why?)
Geopolitics and energy security	States; regional blocs/institutions; political leaders; state-bound companies	Energy and security policy; pipeline politics; energy shortages, cut-offs and crises	Exploitation of and protection against dependencies and vulnerabilities; relative economic gains and power accumulation

Traditional Approaches to Geopolitics and Energy Security¹⁵²

The EU's Policy-Making Modes

Policy process mode	Key features and actors	Time period came into effect	Policy areas
	Takes many different forms, but usually involves relatively non-hierarchical and open forms of government. Actors vary between policy areas, but are normally centred around the Commission and the Council, with the latter acting only by unanimity. Societal actors are often involved, as are the EU's quasi-independent agencies in some policy areas.	In the 1990s, and more especially in the 2000s.	Used to some extent in many policy areas. Areas of particularly heavy use include such Europe 2020-related policies as cohesion, social, employment and environment.

One of the Newly Emerging EU's Policy-Making Modes¹⁵³

With the enlargement of political participation in more policy areas during the EU policy making, the political body in Europe is also considering to adjust the relationship between the government and the EU institutions. Out of the raising concern particularly on energy security

¹⁵² Aalto and Westphal 2008: 5

¹⁵³ Nugnet and Buonanno 2013: 120

threatened especially by geopolitical instability and diplomatic disagreement between Russia and Ukraine in the past few years, the EU leaders are trying to introduce and adopt a new concept, or to find a new method for "a combination of the Community Method and coordinated action by the Member States."¹⁵⁴ German Federal Chancellor Angela Merkel pointed out in her speech at the opening ceremony of the 61st academic year of the Collège d'Europe in Bruges on 2 November 2010 that, with regard to the energy policy at the EU level, "coordinated action in a spirit of solidarity – each of us in the area for which we are responsible but all working towards the same goal"¹⁵⁵ should stay as indispensable. She named the new reference the "Union method", which emphasizes more coordination both at the national level and the European level aiming at more commitment in environmental sustainability, efficiency and security of supply. She explained that as "whatever progress we make at national level obviously benefits Europe as well. But thought also needs to be given to what additional contribution only Europe can make here."¹⁵⁶

It is already implied under the principle of the Treaty of Lisbon that, though Member States retain their authorities to decide their national energy policies, more coordinated action is needed for the sake of EU when establishing a well functioning internal market and energy security.¹⁵⁷ But it is difficult to tell how "hard" in terms of legislation this cross-EU coordination would be. Although directives on the oil stocks and concrete action plan do exist, that no compulsory and comprehensive regulating system to each Member State could be successfully developed let alone implemented at the aggregate EU level still undermines the possibility of energy security to go beyond the current status as aspirational objective repeatedly stressed in the policy documents - it seems that it is highlighted more as textual description and value judgment, more concisely.

Hence even if some of the Member States are requesting a clear and fair legislative metric for the energy security in the 2030 package, a consensus in building legal terms of quantification for

¹⁵⁴ See: *Speech by Federal Chancellor Angela Merkel at the opening ceremony of the 61st academic year of the Collège d'Europe* in Bruges on 2 November 2010. Last time accessible on 30.11.2015 under: <http://www.bruessel.diplo.de/contentblob/2959854/Daten/>.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

¹⁵⁷ Braun 2011: 8-9

energy security remains hard to reach, as the closer cooperation has been materialized, in many cases, more in dealing with internal energy market than with external aspects.¹⁵⁸ Further resources and political willingness needs to be motivated, otherwise the employment of quantitative indicators with hard implementing power in the 2030 package or further similar strategic roadmaps would stay suspending: it would only be able to make the decision that nothing should be decided to secure energy security pragmatically despite out of the reinforcing Community Method.

The softness of the objective of energy security could be customarily attributed to the "selfish" preference of Member States. National governments must have a say, as after several rounds of communication and clarification, the Commission surely would not send any incautious proposition to the Council to take diplomatic risk in capacity and reputation if they know that it would not be easily accepted by the Heads and Ministers of the Member States. Pre-conditions of the existing energy system are also shaping people's understanding and conception of their stances and scenarios. Policy continuity and progression is often high valued. The multi-facet of the energy security issue, especially the concern of East-Central European governments drawn from the past waves of geopolitical instabilities and insufficient diversification of source of supply raised the importance of political and economic sovereignty, which partly results in the least value that could be added by EU towards its Member States among all the aspects of energy policy.¹⁵⁹

Even in the case of renewable energy and energy efficiency, it is also criticized, for instance by ClientEarth that the 2030 Climate and Energy package has a setback compared with the 2020 package. The RES target will only be legal-binding at the EU level without concrete requirements set for each state, and the EE target will stay even merely as indicative EU-wide. No accountability and investor certainty is obligated to be provided. It is further questioned by ClientEarth that whether the delivery of the objectives under the 2030 governance system could be effective, arguing that:

¹⁵⁸ Haghighi 2007: 180

¹⁵⁹ Buchan 2010: 357

supported by a proper framework, the use of well-developed indicators can ensure a certain intensity of oversight and make it easier to draw comparisons between information and Member States over time. However, the Commission will need to clarify the periodicity of its assessments and what it plans to do if Member States are not living up to their commitments. As already mentioned above, if there is no accountability for following process or achieving a certain result, the indicators will not likely be a key contributor of effectiveness.¹⁶⁰

The embarrassment brought by the softness core of the targets embedded in the hard shell of the ordinary legislative procedure nevertheless to some extent proves what has been warned before hand: policy design shows a mixture of various and evolving policy making modes. Thoughts on finding new approaches of EU governance on the energy security are rising, which leads us also to the debate on the policy instruments and convergence of the European Union: maybe the relatively soft instrument to actualize supply of security should be partly categorized as an attempt to promote conversation and coordination in the policy areas where legislative approach is perceived as premature, inappropriate or currently unfeasible political-wise,¹⁶¹ rather than overwhelmingly aiming at the immediate realization of hard legislation. The fact that there are other non-binding tools such as recommendations, guidelines, or even self-regulation within a commonly agreed framework also calls the possibility and necessity to include thoughts based other modes of management.¹⁶² Dilemma emerging in the 1990s between the quickly advancing EU economic integration and the hesitance from Member States to transit power to EU's supranational governance structure invited new forms of governance supported by peer review, benchmarking, coordination, networking to come into place, which gave impetus to the introduction of the Open Method of Coordination (OMC) defined in the Lisbon Treaty (2000) as an soft instrument for intergovernmental policy-making.¹⁶³

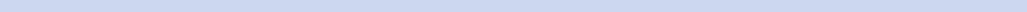
¹⁶⁰ ClientEarth 2015: 22-23

¹⁶¹ Nugnet and Buonanno 2013: 132

¹⁶² See: *White Paper on Governance* (2001).

¹⁶³ See Open method of coordination. Last time accessible on 10.12.2015 under: http://eur-lex.europa.eu/summary/glossary/open_method_coordination.html

Policy instruments and policy convergence

					
Hard					Soft
Legally binding and detailed law (mainly in the form of regulations)	Legally binding objectives (mainly in the form of directives and treaty provisions)	Agreed objectives supported by strong peer review, benchmarking and structured co-operation	Agreed objectives, but with some optionality regarding active participation – as with CFSP and CSDP operations	Agreed objectives supported by weak peer review and benchmarking	Recommendations, but with little or no follow-up

OMC does not aim at resulting in binding EU legislative measures, nor the adoption or amendment of national law. Instead, it offers a new common framework for Member States to cooperate and design national policies towards certain common objectives. Principally based on "the jointly identifying and defining objectives to be achieved (adopted by the Council); jointly established measuring instruments (statistics, indicators, guidelines); and benchmarking, i.e. comparison of EU countries' performance and the exchange of best practices (monitored by the Commission)", the OMC process is in fact limiting the surveillance power of the European Commission, excluding the European Parliament and the Court of Justice, and putting policy implementation of EU States under the evaluation of another - the peer review.¹⁶⁵

The OMC is a gentle and semi-voluntary approach: it sets policy goals in general, but uses loose and non legal-binding system to achieve them. It attempts to find the balance between pursuing collective action on the one side, and the accommodation of the sovereignty and variety of Member States on the other side, especially when some of them are willing to see the policy changes, but some others show hesitance or even reluctance. This act of balancing grants the European Commission only limited license to intervene what in the end belongs to the duties of

165 Ibid.

Member States, and focuses more on the policy outputs than inputs. In this case, the effectiveness of the OMC has also become part of the argumentation. It is indeed difficult to measure without forceful commitment, to which extent flexible policy actions could reach their pre-set goals and have impact in a precise way. Nevertheless, the development of the OMC still can somehow present higher fitness and competence in the policy areas where the hierarchical structure of the Community Method shows inconvenience when more commitments of public-private cooperation and wider political participation are required.¹⁶⁶

The terms on energy security in the 2030 framework could from some angle fit into the description. It roots in the suggestion from the Commission to the Council and the Parliament in the procedure of Community Method, but apart from the GHG emission reduction target, which is being supported by the quantitative model of Energy Trading System (ETS), no other objective is devised with concrete goals for individual Member State, nor regulated with effective and systematic mechanisms for accountability, traceability and punishment for incompliance. In the case of energy security, though the objective is adopted within the package along with other targets, it is even more softer without indicators to give quantitative assessment, which allows the implementation of Member States to be based on their own interpretation without enforcement on practical commitment.

Somehow the attempt to combine both the Community Method and the Open Method of Coordination for better understanding the 2030 package has in fact already reflected the immaturity to ensure quantified energy security targets at the aggregate EU level: the overall acceptance is still expected to reach the necessary level for forceful average implementation. In spite of the observable readiness offered by the EU context and institution appealing for more effective (but so far also vague) visualization of energy security, demand in flexibility and self-determination remains the core and unshakable principle. This sometimes even makes the effort to promote political participation and coordination trapped and less promising, though all approaches of security of supply should "aim at 'insuring' against supply risks with an emphasis on cost-effectiveness and the shared responsibility of governments, firms and consumers."¹⁶⁷

¹⁶⁶ Haghighi 2007: 136-138

¹⁶⁷ Checchi et al. 2009: 2

6. Conclusion

Availability

- The review on the currently available indicators and models for energy security presents the first understanding on how energy could be quantified.

Accessibility

- EU has limitations in choosing quantitative energy security indicators due to the technical feasibility and political appropriation. The included indicators investigating diversification, dependence and disruption of energy supply are nation-oriented and more functioning as technical and consultative analysis for policy options and their outcomes rather than as potential pre-legislative regulations.

Affordability

- The summary of the historical development of energy security in EU policy papers before the 2030 Climate and Energy Strategic Framework presents the context of relevance to quantify EU energy security.
- The legislative procedure of EU energy policy making offers the institutional affordability for quantification.

Acceptability

- The softness core of the energy security target embedded in the hard shell of the ordinary legislative procedure require an integrated interpretation with combining EU policy making modes of the Community Method and the Open Method of Coordination, under the condition of which a forceful introduction of the energy security indicators with the notice of EU could be less than mature for the overall acceptance at the aggregate EU level.

This thesis tries to answer the question why there is no quantitative indicators for energy security in the 2030 Climate and Energy Strategic Framework from the four aspects that are to some extent in line with the way energy security is defined: the availability of quantitative indicators for energy security *per se*, among them what are the indicators that could be accessible to and adopted by EU; how EU could context-wise and institution-wise afford to introduce energy security indicators; and why they have not been accepted in the 2030 framework. The specific conclusions are demonstrated in the chart above.

This analytical approach, however, does not jump out of the criticisms that the 4 As definition of energy security has to face: the overemphasis on the Member States somehow impedes a wider inclusion for all the actors being part of the energy system to come into the contribution to the policy decision - a shortage that has already been exposed in practice and realized in the policy papers such as European Energy Security Strategy. The narrow range of investigation is partly related to the technical difficulty to effectively identify the working channels and the accurate weights of other actors in the EU energy security policy making process in the absence of the likely useful methods of interview and participatory observation, which could not be applied due to the limitations of time and access. Only with the existing reply papers from the stakeholders to the Green Paper of the 2030 package - the causality of which in the amendment from the Green Paper to the conclusion of the European Council remains less than explicit for concrete estimation and comparison, so that merely tentative conclusions could be expected – the commitments of the various actors other than the Member States are still calling for further deserved attention and effective research approach.

The missing stances and performances of the stakeholders in the analysis also stand to some extent contrary to the original research plan to conduct an institutional analysis for policy making inquiring information flows and structure of political participation. Actors on the arena could have been visible and representative, but the risk of indulging in the unprocessed materials without the sufficient certainty to draw reflective conclusions from them has turned the research plan towards the perspective more focusing on the modes of EU policy making and the interaction between the Member States and the EU institutions. In this sense the perception and conception of the way of the behaviors rather the behaviors *per se* is more highlighted, which is

also what the analysis of the thesis attempts to convey: the reason why there is no current practice in quantifying energy security in the 2030 Climate and Energy Strategic Framework, sometimes might not lie in what should be done but not done, but in what thought could not be done.

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Annex

Public Consultation on the 2030 Climate and Energy Policy Framework

Summary in the Category on Security of Energy Supply

<https://ec.europa.eu/energy/en/consultations/consultation-climate-and-energy-policies-until-2030>

Country	Contributing Group	Title/Name	Points of Reply	Remarks
Austria	Member States	Bundesministerium für Wirtschaft, Familie und Jugend (BMWFJ)	• wie <u>sich Ziele wechselseitig beeinflussen</u> • bzw. wo <u>Zielkonflikte</u> bestehen und entstehen könnten zu überlegen. • Die Ziele der Versorgungssicherheit, Nachhaltigkeit (einschließlich Sozial- und Umweltverträglichkeit) und Wettbewerbsfähigkeit sind zu berücksichtigen und <u>miteinander abzustimmen</u>. • Maßnahmen und Lösungen, die nicht <u>nachhaltig</u> sind, zu vermeiden. • <u>Effiziente</u> Industriebetriebe müssen am Standort Europa langfristig eine <u>Zukunftsperspektive</u> sehen können (insbesondere durch einen wirksamen Schutz vor Carbon Leakage).	3 pages
Cyprus		Ministry of Energy, Commerce, Industry & Tourism - Energy Service	Cyprus should not be isolated from trans-european energy networks, otherwise it would impose great limitations regarding the degree to which sustainable and environmental solutions can be accommodated. The capacity of the electricity transmission system to integrate intermittent sustainable energy sources without risking the system's energy security is limited due to <u>the lack of interconnections</u> with the European meshed electricity network. Hence, future European policies should take into account the above limitations and at the same time pursue ending the <u>isolation</u> of member states and regions.	2 pages
Czech		Ministry of Industry and Trade	• The transition to be carried out in a cost-effective, technologically neutral and sustainable manner <u>must not jeopardize the security of</u>	12 pages

			<u>energy supply.</u> • Although the European energy policy has three strategic objectives (sustainability, security of supply and competitiveness) <u>the existing energy and climate policy only focused on sustainability.</u> • It is necessary to address the issue of <u>setting objectives or at least the metrics for energy security</u> and competitiveness. • Unless the objectives for the area of generation adequacy and security of supplies are specified, the Member States must have available the instruments, including <u>financial instruments, to ensure the security of supplies.</u> • <u>Sustainable use of domestic energy sources</u> should be the key determinant of European energy policy. • It is necessary to define <u>clear indicators</u> expressing the security of supplies (import dependency, security of electricity supply, reliability standards and their implementation, network bottlenecks, the size of stored energy in proportion to the consumption not only for the oil sector). • <u>State aid</u> rules must temporarily allow for targeted interventions of the Member States, if there is a risk of non-compliance with the targets (in particular, as regards the decarbonisation and the security of supplies) until market functioning and market signals for investors are restored. • the completion of the process of implementation of the target model for <u>allocation of cross border capacities and the liberalization of the energy</u> >> A necessary condition is also <u>the removal of close spaces in infrastructure and international cooperation during the management and planning of the network development.</u>	
Denmark		Ministry of Climate, Energy and Building	N/A	3 pages
Estonia			• building <u>new electricity generation capacity</u> (including base- load capacity) is not possible without state subsidies to ensure energy security (security of supply, affordability and sustainability) in Estonia and in the region • <u>Producing oil from oil shale</u> provides three times more added value	4 pages

			and decreases CO2 emissions in the production phase by two times while providing for security of supply, growth and jobs • <u>a more widespread use of indigenous energy sources in a resource efficient way</u>, and implementing EU legislation does not undermine possibilities for production and use of indigenous energy sources (<u>target conflict</u>)	
Finland		Prime Minister's office	• Security of supply and affordability of energy are essential in <u>ensuring the competitiveness</u> of the EU and Member States and the <u>well-being of its citizens</u>. • <u>Increase of the renewable energy production</u> requires <u>investments in the network infrastructure based on market</u> • <u>the connection of the energy islands to the interconnected European network</u> (e.g. LNG-terminal on the coast of the Gulf of Finland and the Balticconnector gas line).	7 pages
France			N/A	5 pages
Lithuania			• <u>Criteria or risks</u> to established to allow the assessment of progress in the achievement of security of supply, and to adopt <u>recommendation guidelines</u> regarding the achievement of these criteria instead of a specific target. • Security of supply should not be treated as less important or requiring less monitoring in assessing their achievement progress • to prepare <u>regional programs</u> • Development of <u>appropriate investment climate</u> for investment attraction • faster implementation of <u>energy infrastructure</u> interconnections projects • <u>Energy price</u> is determined by the expenses for assuring security and reliability >> security measures must be evaluated giving priority to the right price for final customer • <u>Development of unconventional energy resources</u> might promote diversification of energy resources. • <u>Improving conditions for investments, expanding infrastructure, especially the inter-systemic interconnections, encouraging maximum</u>	17 pages

			<u>usage of indigenous energy sources, strategic reserve maintenance and joint reserve storage with partner countries, smart technology introduction and development of measures for energy storage</u> • reinforce <u>external dimension</u> of EU energy policy, which would help to <u>diversify energy resources, their geographical origins and routes</u>. • EU must introduce <u>clear and non-discriminatory legal terms</u>, improve conditions of investments, physical security, development of environmental and energy infrastructure • <u>Smart technology</u> introduction would lead to the most efficient electricity consumption and production. • <u>regional production-consumption compliance and the resulting obligations for Member States according to their capabilities</u>	
Netherlands		Dutch liberal party VVD in the lower house of parliament	• EU member states should cooperate in their build-up of <u>back-up capacity and energy infrastructure</u> • a strong <u>interconnected EU market</u> and strong internal infrastructure	5 pages
Poland		Ministry of the Environment	• Energy as <u>non-measured aspects</u> • The right perspective of setting possible objectives is the perspective <u>balancing</u> environmental aspects, security of energy supply, increased competitiveness, and development of the EU economy. • to ensure <u>adequate share in the energy mix of energy production</u> based on stable manufacturing sources • <u>predictability of investments in new production capacities</u> • <u>fossil fuel resources being the guarantor of energy security</u> and stability of energy systems • to support the development of new low-emission coal <u>technologies</u> • Regional and consequently <u>European market integration</u> through the introduction of <u>mechanisms of market coupling</u> and the development of the necessary <u>transmission infrastructure</u> will significantly contribute to enhancing energy security. • <u>system interconnection and extension of national energy infrastructure</u> in the region of Central and Eastern Europe, as well as the need to eradicate <u>barriers to cross-border trade</u> in energy in the form of	14 pages

			- unplanned energy flows <u>solving these problems in the short, medium and long-term</u> <u>integration of national energy markets of the Member States</u> <u>cross-border connection capacity (power available)</u>	
Portugal		Director General of Energy and Geology (?)	- energy efficiency and renewables is essential - the <u>accomplishment of binding targets</u> like renewable energies, implies the establishment of previous conditions at internal energy market level, that enhance the security of supply <u>flexibility mechanisms</u> of achieving the goals and the use of <u>alternative technologies and forms of energy</u>	6 pages
Romania			- The security of supply, in the sense of <u>fuel supply together with generation adequacy and the reliability of the electricity grid</u> is an important component of energy policy. <u>energy dependency on imports should be decreased</u> by 2030, keeping in mind future competition between big energy importing regions >> <u>global energy competition</u> <u>Support energy producers</u> and help <u>modernise the electricity generation sector</u> within the EU through the continuation and <u>improvement of free allocations schemes</u> <u>Diversity</u> of energy sources and origins, diversity of technologies and domestic industrial know-how and capacity - Limit or better integrate the share of intermittent sources, which are inducing instability of the grid, calling for <u>costly counter-measures</u> (e.g. storage). - As concerns grid infrastructure, <u>give priority to Interconnections rather than to RES specific expensive connections</u>, at least for as long as it takes to ensure the creation of an effective European integrated market and infrastructure.	8 pages
Slovenia			N/A	11 pages
Spain			<u>Reduce GHG emission</u>, to complete the <u>internal energy market and the development of interconnections</u>	6 pages
UK		Department of Energy and	<u>A well-functioning single market</u> will help to integrate low carbon	30 pages

		Climate Change	energy, improve energy security and reduce energy prices. • The EU will need to continue to pursue a wide range of <u>low carbon technologies</u> and support <u>energy efficiency</u> in order to decarbonise in a way that is cost-effective and maintains security of supply and <u>mitigates the risk of carbon leakage</u> • Coordination of MS and EU measures • <u>DO NOT</u> see emissions reductions or security of supply as valid arguments for a renewable energy target • <u>The responsibility for ensuring national security of supply rests with Member States.</u> • <u>improvements to the existing market and all types of capacity mechanism, the Capacity Market</u> • <u>development of indigenous resources</u> • <u>Exploitation of unconventional hydrocarbon resources</u>	
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