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Exemption Regime for new gas infrastructures under

European & National law -

The case of Alexandroupolis Floating Storage and

Regasification Unit (FSRU) – An Energy Gateway to Europe

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ABSTRACT

This dissertation was written as part of the MSc in Energy Law, Business, Regulation and Policy at the International Hellenic University.

The global energy mix is shifting and a new product, Liquefied Natural Gas, promises to change the business of global energy trading. Due to overwhelming dependency on imports, the European Union sets the diversification goal at a high level on the energy policy agenda and LNG becomes a strategic priority, attempting to reform its energy market. Nevertheless, the lack of the proper infrastructure especially to Southeast Europe sets a burden for the integration of the EU energy market. New energy technologies such as FSRU emerge as more advantageous solutions than onshore LNG Terminals for the import of LNG, aspiring to achieve the objective of security of supply as well as a sustainable, resilient and competitive gas market. This thesis is an attempt to elucidate at first the regulatory framework that surrounds this brand new infrastructure, as regards both its legal nature under international and national law, and also the access regime to this, in accordance to the European and national Law too. A clarification of the main points of the prevailing access regime according to EU law and particularly the way these rules have been implemented is examined. Towards a more integrated approach, Commission's exemption decisions which constitute the benchmark of the exemption procedure are mentioned in detail. FSRU and the existing regulatory framework promises to offer an opportunity to SE countries to overcome the obstacles, to develop the proper infrastructure and to take an active role in the energy map. In this context the Alexandroupolis FSRU constitutes a project of paramount importance as far as EU's and particularly Greece's energy security is concerned. This dissertation concludes by pointing out the importance of the project, which will help Greece to exploit its potentials in order to play a leading role in the Europe's energy chessboard.

Keywords: Liquefied Natural Gas (LNG), Floating Storage Regasification Terminals (FSRU), Exemption from Third Party Access (TPA), Unbundling regime, Alexandroupolis Floating Storage Regasification Terminals (FSRU).

PREFACE

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LIST OF ABBREVIATIONS

DESFA	HELLENIC TRANSMISSION SYSTEM OPERATOR
EURO	€
EU	EUROPEAN UNION
EREGG	EUROPEAN REGULATORS' GROUP FOR ELECTRICITY & GAS
EoL	EXPRESSION OF INTEREST PHASE
INTGS/ASFA	INDEPENDENT TRANSMISSION SYSTEM OF NATURAL GAS
IMO	INTERNATIONAL MARITIME ORGANIZATION
NNGTS	GREEK NATIONAL TRANSMISSION SYSTEM OF NATURAL GAS
NRA	NATIONAL REGULATORY AUTHORITY
LNG	LIQUIFIED NATURAL GAS
FSRU	FLOATING AND STORAGE REGASIFICATION UNIT
TEP	THIRD ENERGY PACKAGE
TPA	THIRD PARTY ACCESS
TSO	TRANSMISSION SYSTEM OPERATOR
rTPA	REGULATED THIRD PARTY ACCESS
RAE	ENERGY REGULATORY AUTHORITY
nTPA	NEGOTIATED THIRD PARTY ACCESS
OU	OWNERSHIP UNBUNDLING MODEL
ITO	INDEPENDENT TRANSMISSION SYSTEM MODEL

CHAPTER 1: INTRODUCTION

Global primary energy consumption picked up strongly in 2017, and given that energy is a vital part of Europe's economy and modern lifestyles, Europe has become the 3rd energy importer, after China and the Middle East. Great technological improvements and environmental concerns led to a shift in the energy mix, with continued gradual decarbonization and increased reliance on natural gas. Natural gas and Liquefied Natural Gas (hereinafter LNG) can guarantee the transition to a lower carbon future in the most powerful and affordable way. At the same time, the production surplus of LNG begins to rise, leading to a substantial change in the market structure and organization¹.

Given that energy security in the Energy Union is directly connected with the international energy scene, the vision of the EU becomes an integrated continent-wide energy system where the resources can flow freely and all Europeans have uninterrupted access to energy sources at an affordable price². Today Europe is extremely vulnerable due to its overwhelming increasing import dependency on one supplier (Russia with 39.90%)³, which brings the security of supply at the forefront of the energy policy. From the author's point of view, the latter should focus on three main directions: a) diverse energy routes b) diverse natural gas suppliers with also pricing formulas and c) even the product should be different, more flexible. EU, having considered the fundamentals of the LNG in the Global Gas Market⁴, sees LNG and storage as the key tools to achieve diversification, flexibility and security of supply. The

¹ BP (2018). *'BP Statistical Review of World Energy 2018'*. [online] Available at: <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf> [Accessed 30.11.2018].

² European Commission (2015). 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 (2015) *"A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy"* 22.2.2015 COM (2015) 80 final. [Accessed at 29.9.2018]

³ European Union (2018). *EU Energy in Figures Statistical Pocketbook 2018*. EU Publications.

⁴ International Gas Union (2018). *2018 World LNG Report*. [online] IGU. Available at: https://www.igu.org/sites/default/files/node-document-field_file/IGU_LNG_2018_0.pdf [Accessed 22.8.2018].

objective is to ensure that all Member States have access to LNG, and to make the EU attractive to it.⁵

The deployment of a broad range of new energy technologies will be crucial to this direction. Three discrete steps will prove essentials: i) the establishment of the necessary infrastructure ii) the promotion of necessary investments and especially those new energy technologies, which promised to achieve an efficient and functional market at the minimum cost and iii) the enhancement of close cooperation with international partners so as any obstacles from the LNG trade globally are removed and free, liquid and transparent LNG is established. Among the most promising new major infrastructures, ***Floating Regasification Storage Unit (hereinafter FSRU)*** is a “fast track” way of opening energy markets to natural gas, as it is constructed sooner and is more cost - effective than the land - based alternatives of similar size. There are many issues to take into consideration for an FSRU. This thesis will try to clarify the legal framework both with regard to its pre-construction and installation phase. Additionally, it will examine the exemption regime according to the ar.36 of Directive 2009/73/EC of this infrastructure from the viewpoint of both the EU and national law. The Alexandroupolis FSRU will be presented as a typical example of this brand new infrastructure.

⁵ European Commission (2016). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions "On an EU strategy for liquefied natural gas and gas storage". [online] COM (2016) 49 final. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/1_EN_ACT_part1_v10-1.pdf [Accessed 30.6.2018].

CHAPTER 2: THE ROLE OF LNG IN THE EU'S DIVERSIFICATION GOAL

The LNG seems a major opportunity for the EU gas markets, particularly when it comes to gas security, as it is able to meet all the aspects of diversification goal. Firstly, it provides an additional gas source in a highly import-dependent region, while developing access to a diverse range of potential suppliers, ensuring the amount of gas needed for consumption; Countries that the EU fosters good relations with (i.e. the US, Australia, Qatar) have emerged as the fastest –growing LNG exporters and after US cargoes had already reached Europe in 2017 - Greece included⁶ -European countries are particularly keen on using US LNG to diversify their supplies from Russian gas. Secondly, it also promotes price-based competition and due to the international suppliers, prices are affected by more competitive markets; this will ultimately translate into lower prices for customers. Additionally, even the product is different. LNG is more flexible than pipeline gas, as it can be transported in smaller quantities and to the consumers that do not have access to the gas system (through pipelines)⁷, which is developing new gas markets as well as potential hub-based ones⁸. It should not be overlooked that a liquid, easily traded commodity is less vulnerable to the exertion of market power and price manipulation, which can benefit importers.⁹

CHAPTER 3: TRANSMISSION NETWORK AND NEW INFRASTRUCTURE INVESTMENTS

The LNG is transported, via special vessels after being cooled in approximately -162C, to the required destination where it needs to be heated up to be converted to its

⁶ Hellenic Gas Transmission System Operator S.A (2018). *“Revithoussa welcomes the first US LNG cargo at the newly build 3Rd Tank”*. [online] Available at: <http://desfa.gr/en/press-center/press-releases/h-reby8oysa-ypodexetai-to-prwto-amerikaniko-fortio-yfa-sthn-3h-dejamenh> [Accessed 13.1.2019]

⁷ Ibid 5

⁸ A. Molis, *“Towards a Regional Gas Market in the Baltic States: Political, Economic and Legal Aspects”*. (2016). Humanities and Social Sciences, Latvia, 24 (1).

⁹ L. Franza, /C. V. Linde Der/ P. Stapersma, *“Europe’s Energy Relations. Between Legacy and Transformation”*. Clingendael International Energy Programme (CIEP) (2018) [online] Available at: http://www.clingendaelenergy.com/inc/upload/files/CIEP_Paper_2018-02_Web.pdf [Accessed 11.12.2018]

original gaseous state, before the gas is pumped into the storage systems. After this process takes place, the gas is injected into the transmission system to be used by its final gas users. Thus, for the import of LNG, a well-established transmission network is needed. A fully secure and operational transmission grid will guarantee “*Clean Energy for all Europeans*”¹⁰ and lead to an integrated energy market.

In order to complete the internal energy market and to ensure effective competition, investments *in new infrastructure* are of paramount importance. Thus, the Directive 2009/73/EC includes special provisions, according to which Transmission System Operators (hereinafter TSO’s) are obliged to strongly promote investments to the network and namely to the new infrastructure, in order to ensure the system’s long term ability to meet the demand¹¹. It is worth mentioning that investment projects in new infrastructure entail enormous costs¹² and despite their contribution to the security of supply, these costs could not be shouldered by the market alone. This implies that the whole cost will encumber the system users, considerably increasing the final energy price incorporated in their bills. The fact that in Europe, most of the countries are going through a long period of economic and financial crisis and the ensuing recession, this places an undesirable burden on this scenario. Thus, the way to an integrated and effective energy market is accomplished through its incorporation to the private sector so as to curb the risk and construct the infrastructure needed.

To this direction the EU enhances the development of *new infrastructure projects* in two ways: Firstly, by including these projects in the Projects of Common Interest (PCI) and financing them through European instruments (*i.e. European Regional Development Fund, European Fund for Strategic Investments etc*) and secondly by offering independent economic companies incentives to undertake the construction of these highly cost-intensive and risky new infrastructure projects. The latter is achieved by enabling them to apply for an exemption of these new infrastructures from TPA principle, tariffs methodologies and unbundling obligations, provided that certain

¹⁰ European Commission (2015). 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 “*Clean Energy For All Europeans*” COM (2016) 860 final. [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/com_860_final.pdf [Accessed 22.9.2018]

¹¹ Art. 22 of the Directive 2009/73/EC

¹² The estimated average construction costs of an FSRU reach the \$400-500m

conditions, laid down in Art.36 of the Directive 2009/73/EC are met. In this way, the investors could recoup their investment costs and an adequate return on equity.

4. THE FLOATING STORAGE AND REGASIFICATION UNIT (FSRU)

The entrance of LNG to Europe is marking the opening of new gas markets. Nevertheless, many of these new markets have no access to gas infrastructure needed for LNG or cannot afford to construct onshore facilities to receive it. For those markets, with access to the sea, the flexibility is offered by an innovative technology, *the offshore LNG Floating Storage and Regasification Unit (FSRU)*. The FSRU demand has grown rapidly soon after its emergence. In 2018, the global fleet comprises 24 operational FSRU terminals, boosting total regasification capacity of FSRU projects to 84mtpa^{3 13}. FSRU could meet the objective of diversification as it is capable of creating a hitherto non-existing market¹⁴, while offering alternative energy supplies as well as supply routes ensuring the security of supply goal. Moreover, given that new LNG supplies from Qatar, US, Australia, Malaysia, and Africa increase LNG liquidity globally, some of these should go towards the European market, which is characterized today as consolidated, due to its overwhelming dependency on one supplier. The uneven distribution of import capacity across Europe, in that most of the existing capacity is located in Western Europe, while South Eastern European regions still lack LNG import infrastructure, necessitates the development of new regasification units in Eastern Europe. As a matter of fact, some of these countries have already started developing it¹⁵.

¹³ Ibid 4

¹⁴ This is the case of the Baltics & South-East Europe, where LNG regasification units have been identified as Projects of Common Interest under the Regulation on guidelines for trans-European energy infrastructure (EU) 347/2013) and is reflected to the prices, achieving the EU's main goal "Clean Energy for all Europeans" (Ibid footnote 8)

¹⁵ Lithuanian state control public company AB "Klaipėdos nafta" has developed Klaipėda LNG Terminal using FSRU in Klaipėda, Eagle LNG Terminal in Albania is using FSRU start up, while Polish grid operator Gas System is considering a floating LNG import terminal in Gdansk bay.

4.1. Definition –Technical issues.

The LNG cargo is transported via specially designed cryogenic sea double hull¹⁶ vessels (LNG carriers) or cryogenic road tankers, which protect the cargo systems from damage or leaks. Arriving to its final destination, LNG has to be unloaded to an LNG Terminal, where it is first stored and then degasified and pumped to the downstream natural gas system. An FSRU is an LNG storage ship, during whose offshore operation, it is moored to the port of the customer and functions as an onshore terminal. It consists of a) an LNG vessel/tanker that is incorporated onboard, b) a regasification plant capable of transforming LNG back into its gaseous state using seawater to warm the LNG, c) a storage unit and d) a special installation (a turret system or vessel manifold system) for transporting LNG onshore and pumping it into the natural gas pipeline network¹⁷. The tankers are designed as: a) membrane tanks, which are box-shaped or b) as ‘Moss tanks’ that are spherical. The ships measure up to 290m.long and 49m.wide, while its cargo capacity is estimated between 125,000 m³ and 170,000 m³ ¹⁸; the whole process of filling FSRU with LNG does not exceed 24 hours. Fig.1 presents the “chain” from receiving the LNG cargo to its pump to the network.

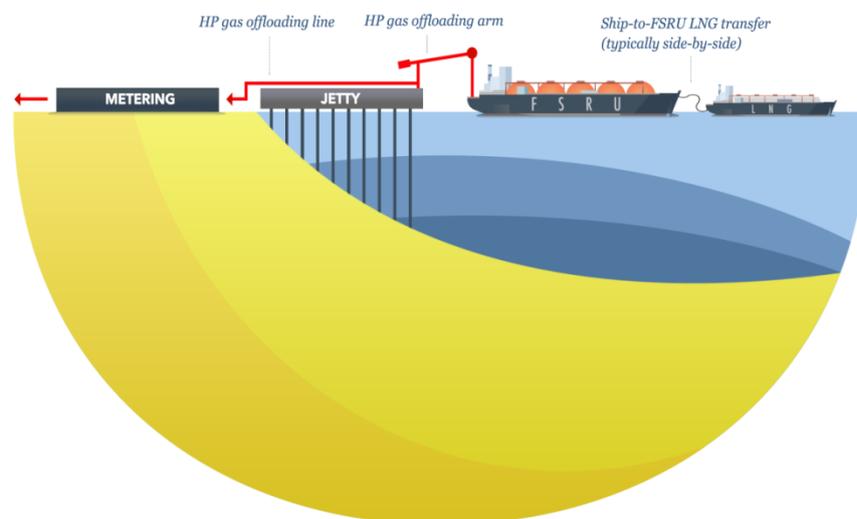


Figure 1: Source Floating Storage and Regasification Units. Golar LNG

¹⁶ Concerning the insulation of the tankers, and imposed by MARPOL Convention for safety reasons.

¹⁷ AGL, 'Fact Sheet Floating Storage and Regasification Units' (2017).

¹⁸ The Oxford Institute for Energy Studies (2017), 'The Outlook for Floating Storage and Regasification Units (FSRUs)'. NG 123.

The FSRU ships are constructed either as new built ships with integrated equipment into the vessel or are converted from LNG carriers, so that the equipment is built as a separate part which is then modified to the tanker.

4.2. Advantages over Onshore terminals

The FSRU provides a cost-effective and time efficient solution since it costs 50-60% less than a new onshore terminal and is constructed in only 3 years compared to 4-5 years needed for its onshore counterpart. Respectively, a converted one from LNG tanker takes only 12-18 months to construct¹⁹. Furthermore, the whole infrastructure can be easily removed, so there are minimum decommissioning costs. The FSRU's asset is its increased flexibility, seeing that it manages to meet the gas demand at once both at different locations and by different suppliers. As a result, it is possible to achieve a switch from a market with long term contracts to a spot one, where units can be chartered for even seasonal needs. As for the environmental conditions, FSRU has a minimal footprint, given that LNG is the most environmentally friendly fuel and till today very few incidents have occurred at LNG import terminals. At the same time given that FSRU is not a fixed installation but it functions only for a limited period of time²⁰, there is a demand for fewer environmental permissions compared to onshore terminals.

5. LEGAL NATURE OF FSRU AND THE APPLICABLE REGULATORY FRAMEWORK

FSRU has a multifunctional nature: it is used as an LNG carrier, a storage facility, or performing the regasification process and also transmitting the gas to the pipeline. For the execution of the above, it is forced either to move between ports or to be moored during its operation. Therefore, it is maintained that FSRU is categorized either as a

¹⁹ Ibid 17

²⁰ The FSRU contracts has duration 20-25 years

ship or as an offshore facility²¹. This dual nature bears further implications in the contexts of the coverage of strict liability regimes of the owner/operator for pollution damages, environmental concerns, equipment safety and certification. Therefore, a completed approach is required, encompassing different aspects of both international and national law.

5.1. FSRU under International Law

The definition of the ship as given by a series of International Maritime Organization Conventions is crucial in order for a FSRU to be categorized as a ship. According to UNCLOS²², the status of a ship is strongly related to the state, whose flag it bears and is registered with. Since FSRU is also used as a LNG carrier, it is subjected to the regulations for safety transport of dangerous goods. The SOLAS Convention²³ defines tanker as a cargo ship constructed or adapted for the carriage of liquid cargoes in bulk. Accordingly, since FSRU is used as a storage and regasification unit, it is subject to a part of SOLAS, which is the FSS code²⁴ and which separates gas carriers from others and regulates details about their equipment needed in case of fire. Moreover, the MARPOL Convention²⁵ defines ship as a vessel of any type whatsoever operating in the marine environment. Floating crafts and floating *platforms* are also included. This covers FSRU not only when the ship is moving but also when it is fixed-moored to the port. At this point, a brief reference to the 2010 HNS Convention²⁶ should not be omitted. This Convention recognizes the right of the ship-owner to limit his liability for loss or damage to persons, property and the environment, arising from the carriage of HNS by sea, to a certain amount. The innovative about this Convention is that

²¹ A. Koska-Legiec. "What is the Real Issue with Floating Storage and Regasification Units? Regulations Related to the FSRU Implementation Process in the Baltic Sea". *TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation*, 12(3), (2018) pp.499-503.

²² Ar.92 of The United Nations Convention on the Law of the Sea UNCLOS 1982

²³ International Convention for the Safety of Life at Sea (SOLAS), 1974 Adoption: 1 November 1974; Entry into force 25.5.1980

²⁴ Fire Safety System Code Included on Chapter II of SOLAS and come into force in 2002.

²⁵ International Convention for the Prevention of Pollution from Ships (MARPOL) Adoption: 1973 (Convention), 1978 (1978 Protocol), 1997 (Protocol - Annex VI); Entry into force 2.10.1983 (Annexes I and II).

²⁶ International Convention on Liability and Compensation for damage in connection with the carriage of Hazardous and Noxious Substances by Sea 2010 (2010 HNS CONVENTION).

provisions referring to LNG are introduced for a first time recognizing its importance as a cargo. This convention has yet to be enforced; it will take effect after its ratification. The EU has already proposed its ratification by the Member States²⁷. As for the offshore installations, the only definition comes from the oil sector. The OPOL Agreement²⁸ defines offshore facility as “*any installation of any kind, fixed or mobile, intended for the purpose of exploring for, producing, treating or storing Oil from the seabed or its subsoil where such installation has been temporarily removed from its operational site for whatever reason;*”. Concluding, it is obvious that in International Conventions it is the *purpose of a vessel’s use* that counts for its classification as a ship rather than its characteristics.

5.2. FSRU under Greek Law.

Greece applies all International Conventions regarding safety at sea. According to the Greek Constitution²⁹, the International Conventions that have been ratified take precedence over all contrary domestic laws. Additionally, the Greek Code of Private Maritime Law³⁰ defines ship as any vessel with a net tonnage of at least 10 tons which is predestinated to navigate independently at sea. Since all the above mentioned elements must be met cumulatively, in the event that one is absent, the vessel is characterized as a *seaborne craft*. In Decree-law No 117/1974³¹ the floating storage facilities of tonnage above 10million tons of natural gas are also characterized as ships. All ships sailing under the Greek flag must register in the Greek ship registries. In accordance with this provision, Greek Law 2289/1995 (ar.11 par.6) states that the “*Permanent or temporary marine installations and waterways Construction, irrespective of capacity or displacement, intended for the Manufacture or retrofit for*

²⁷ European Commission (2015). Proposal for a Council Decision on the ratification and accession by Member States on behalf of the Union to the Protocol of 2010 to the International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea with the exception of aspects related to judicial cooperation in civil matters, 22.6.2015 COM (2015) 304 final.

²⁸ Offshore Pollution Liability Agreement (OPOL) (effective as of 21 June 2017).

²⁹ Article 28 of The Greek Constitution

³⁰ Ar. 1 of Greek Code of Private Maritime Law- Greek Law N.3816/1958 (Official Gazette A' 32/8.2.1958)

³¹ Ar. 1 of Law Degree 117 της 19.23.10.1974: concerning the designation as ships of some floating crafts and the application of such vessels to existing provisions. (Official Gazette A '310).

research or exploitation operations domestic or foreign hydrocarbon production, including the refining and storing them;” could also register as ships. Obviously, *it is the capability of the vessel or the installation to navigate independently* that Greek law takes into account for the categorization of a vessel as a ship regardless of whether it moves or it is anchored. This view is also incorporated into the decision of the Supreme Court in “SLOPS” case³², which ruled that a tanker which has been converted and functioned as petroleum separator and which was permanently moored and navigated with the help of sea-going tugs but still maintaining its engine, is characterized as a ship.

Summarizing, FSRU fulfills all the requirements of a ship rather than an offshore installation mainly due to its ability to navigate independently, if necessary. The fact that it consists of other independent units, (i.e. storage and regasification units) does not affect its nature, as these are incorporated into the vessel and could not move independently.

6. ACCESS TO NEW GAS INFRASTRUCTURE ACCORDING TO EUROPEAN LAW

Access to this new infrastructure plays a significant role in the successful functioning and liberalized EU market and is subject to the enforceable right of Third Party Access which is a prerequisite for a well-functioning gas market. TPA is a legal principle, according to which and under certain circumstances the network owners or operators of the system are obliged to provide their competitors with access to their network facilities, even if this is against their will³³. This obligation may apply to new infrastructures too³⁴. Two basic types of access exist in the EU: The “regulated Third

³² No 23/2006 decision of Supreme Court at “SLOPS” case.

³³ A. Kotlowski, ' *Access Rights to European Energy Networks – A Construction Site Revisited*', EU Energy Law and Policy Issues. (2nd ed., Euroconfidential SA. 2009)

³⁴ T. Vijver van der, ' *Third Party Access Exemption Policy in the EU Gas and Electricity Sectors: Finding the Right Balance between Competition and Investments*', Energy Networks and the Law Innovative Solutions in Changing Markets (1st edn, Oxford University Press 2012).

Party Access” (rTPA) and the “negotiated Third Party Access” (nTPA). The applicable access regime is usually defined by the national legislator. Under rTPA³⁵, undertakings must be granted access to the network system or to new infrastructure alike based on published tariffs, on objective transparent and non-discriminatory criteria, approved and monitored by the national regulatory authorities (NRAs). In contrast to nTPA³⁶, independent undertakings could negotiate the terms of access and sign supply contracts directly with network owners or system operators, also on non-discriminatory, transparent and in good faith terms, while potential disputes are subject to an independent settlement procedure³⁷. Member States or NRAs have the right to choose between the above-mentioned accesses regimes. Nevertheless, in recent years Europe not only passed from nTPA to rTPA by establishing it as the default one, but it also enriched it by offering the Member States the option to provide, under certain circumstances, exemption from the TPA especially for the new infrastructure projects³⁸. Wherever this exemption regime is implemented, commercial supply agreements are contracted directly with the operator of the infrastructure, while third parties can gain access to the system, exclusively via a secondary market³⁹. The exemption regime is used by EU Law in an attempt to trigger investments especially in the new infrastructure projects, which is the cornerstone for a secure sustainable and competitive energy network.

³⁵ Article 32 of Directive 2009/73/EC

³⁶ Article 16 of Directive 1998/30 EC

³⁷ C. Lapuerta, / B. Moselle, '*Network Industries, Third Party Access and Competition Law in the European Union*'. *Northwestern Journal of International Law & Business*, 19(3), 1999

³⁸ Article 36 of Directive 2009/73/EC

³⁹ Team Consult G.P.E GmbH (2017). '*A Glimpse at the Landscape of European LNG Regasification Infrastructure*'. [online] Available at: http://www.teamconsult.net/news/files/European_LNG_Regas_Infrastructure.pdf [Accessed at 22.12.2018].

7. THE EXEMPTION REGIME ACCORDING TO ARTICLE 36 DIRECTIVE 2009/73 & AR. 17 REGULATION No 714/2009

Even though new infrastructure projects are likely to boost competition and create an integrated and efficient gas market, the interests between free competition and high-risk investments in energy networks are usually contradictory. *“On the one hand, there are the investors who prefer limited or contestability access to their networks, on the other hand, transmission system operators insist on objective, transparent and non-discriminatory access to gas infrastructure between system users”*⁴⁰. Even though TPA principle should be undoubtedly applicable, its rapid and wide implementation may decrease incentives from energy companies to invest in new infrastructure projects. This is because under the unconditional TPA regime, investors cannot have exclusive supply contracts in order to ensure greater cost-effectiveness. If the investment is not sufficiently profitable, it is bound to be sidelined. The lack of investments will undoubtedly jeopardize the security of supply.

The EU, in an attempt to incentivize private undertakings to invest in new infrastructure projects, empowers the National Regulatory Authorities (NRAs) to grant an exemption of Ar.36 (1) of the Directive to those economically independent undertakings that will invest to new gas infrastructures. Such exemptions must take into account a wide range of relevant circumstances, and as the conditions are rather vague and can thus be interpreted in many different ways, they must be granted always on a case - by- case basis. Professor *Kim Talus* very aptly mentioned that this exemption constitutes *“a compromise between two interrelated aims: the promotion of the internal energy market and network investments, and the need to ensure free competition and TPA to the necessary infrastructure”*⁴¹

⁴⁰ T. Vijver van der. *“Exemptions to Third Party Access for New Infrastructures in The European Community Gas Sector - An Update”*. International Energy Law Review. [online] Available at: <http://International Energy Law Review 2009 Exemptions to third party access for new infrastructures in the European Community gas sector - an update Tjarda Van der Vijver> [Accessed 14.11.2018].

⁴¹ K. Talus, *'New Infrastructure', EU Energy Law and Policy a Critical Account* (1st edn, Oxford University 2013).

7.1. What Constitutes “major new gas infrastructures”

Eligible for an exemption is a *new piece of infrastructure*, for which the main financial commitment to construction will *be made* after the date of publication of the Directive 2009/73/EC⁴². According to the Directive, these are namely: i) the interconnectors between Member States⁴³, ii) LNG facilities⁴⁴ and iii) storage facilities⁴⁵, which are capable of increasing the capacity in existing infrastructure and modifications of such infrastructure, provided such modifications "*enable the development of new sources of gas*". A “major” piece of infrastructure is a project which involves high cost, passing to the final customers and thus increasing their bills⁴⁶. It seems reasonable to link the definition of “major”⁴⁷ to the size of the market concerned and to relate it directly to the additional costs for the connected systems.

7.2. Types of exemption

The types of exemption are referring restrictively to the provisions of article 36(1); mainly new infrastructure projects may be exempted from: a) the TPA regime⁴⁸, and/or b) the unbundling requirements⁴⁹, and/or c) tariff regulation⁵⁰. The exemption decisions cover all obligations (full exemption) and in this case the TPA regime is prohibited, as the capacity of the project is fully booked by the holders of the exemption for its “own use”. On the contrary, they can be limited to a part of them (partial exemption), where third parties obtain access both to the network and to a part of the capacity which remained available through an open procedure, which NRA

⁴² That is to say 15 July 2003

⁴³ Art. 2 par.17 of the Directive 2009/73/EC and in Article 2(1) and Article 2(2)(g) of Regulation (EC) No 714/2009

⁴⁴ Art. 2 par.9 of the Directive 2009/73/EC

⁴⁵ Art. 2 par. 11 of the Directive 2009/73/EC

⁴⁶ Note of DG Energy &Transport on Directives 2003/54-55 and Regulation 1228\03 in the electricity and gas Internal Market "*Exemptions from certain provisions of the Third Party Access Regime*" 30.1.2004. (2004). [e-book] Available at: http://www.rae.gr/old/europe/sub4/exemptions_tpa_DGTREN.pdf [Accessed 16.12.2018]

⁴⁷ Art. 36 par.1 of the Directive 2009/73/EC

⁴⁸ Article 32 of the Directive 2009/73/EC

⁴⁹ Article 9 of the Directive 2009/73/EC

⁵⁰ Article 37(6) and (10) of Directive 2009/73/EC; Article 41(6), (8) and (10) of Directive 2009/73/EC

will decide⁵¹. Although the first decisions were granted for full exemption⁵², over the years the partial exemption became the rule⁵³. In the latter, the necessity and proportionality principle is implemented. Last but not least, any exemption is provided either “...for a limited”⁵⁴ or “...for a defined”⁵⁵ period of time.

7.3. The procedure for granting the exemption

7.3.1. The market test process

The exemption decision is granted exclusively by the NRA, on a case -by- case basis, after a mid-term process. The undertaking, which intends to be granted an exemption, has to file an application to the NRA. The latter before granting the exemption decision shall decide, pursuant to Ar.36 (6) of Directive 2009/73/EC upon the requirements set, the rules and mechanisms for management and allocation of capacity included. To achieve this, the NRA uses the results coming out from a *market test* or an *open season* or *open subscription period*. This is a two-phase process, run by the applicant in accordance with a detailed guideline provided and monitored by the NRA. The purpose of this *market test* is the evaluation of both the market needs and the market demand so as to ensure that the “contracting” capacity⁵⁶ has potential buyers and that it is going to be allocated under objective, transparent and non-discriminatory criteria. Moreover, important evidence about the feasibility of the project and the appropriate size of it is also collected.

a) *First Phase, the so called non –binding phase* involves the preparatory phase and the detailed open season notice; the applicant through a publicly announced procedure invites all the potential users of the new infrastructure to express interest in booking

⁵¹ Note of DG Energy and Transport on Directives 2003/54-55 and Regulation 1228/03 in the electricity and internal market, exemptions from certain provisions of TPA, Issued 30.1.2004 [online] Available at: <http://www.rae.gr/old/europe/sub4/exemptions_tpa_DGTREN.pdf [Accessed at 23.12.2018]

⁵² Commission exception decisions in Opal case (HU-C), Gazelle case (Z/D), Isle of Grain(UK), Shannon LNG Terminal (IE) and Eemshaven LNG –terminal case

⁵³ Commission exemption decisions in Brindisi LNG (IT), Rovigo (IT), Toscana (Livorno) LNG (IT) and the latest Dunkerque LNG (FR)

⁵⁴ Article 17 (1) of Regulation 714/2009

⁵⁵ Article 36(1) of Directive 2009/73/EC

⁵⁶ The remaining capacity for rTPA.

capacity in the project. In this phase, the investor should provide the interested parties with all the useful information for the project, in order to decide whether it is beneficial to apply for capacity or not. The investor of the project should also offer the NRA information referring to the ownership structure of the investment project. An analysis of the wholesale and retail market structure including market shares of the project developer, and those of the potential beneficiaries of capacity allocation, could prove to be useful for NRA, in its decision about the investor's dominant position. A minimum table of contents of the information needed is given by the European Regulators' Group for Electricity and Gas in its interpretative note for Open Season Procedures⁵⁷. Also, the interested parties could express their interest and even submit their non-binding offer including specific terms (i.e. the amount of capacity, duration of the contract etc). In this stage, the NRA has to set the rules and the guidelines for the capacity allocation. According to ar.17 of Regulation 715/2009⁵⁸, the proposed method by the NRA is through auctions, while it is set as a condition that the capacity allocation must enhance new investments and at the same time be in accordance with the market mechanisms⁵⁹. Nevertheless, the applicant shall propose, at the time of submission, his own allocation capacity mechanism. In the *Eemshaven LNG –terminal* case, which has been granted an exemption for *the full* capacity, the investor announced that he will serve the network users presented by order of priority either of contracting or requesting capacity⁶⁰. Also, *in the ICGB Interconnector case*, the first non-binding phase was performed in the above mentioned two phases, but before the

⁵⁷ European Regulators' Group for Electricity and Gas (2007). '*Guidelines for Good Practice on Open Season Procedures (GGPOS)*'. [online] Council of European Energy Regulators ASBL. Available at: <https://www.entsog.eu/sites/default/files/entsog-migration/publications/incrementalcapacity/ERGEG%20Guidelines%20of%20Good%20Practice%20-%20Open%20Season%20Procedures%20%28GGPOS%29.pdf> [Accessed at 2.1.2019]

⁵⁸ Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005

⁵⁹ A. D. Hauteclouque and K. Talus, '*Capacity to Compete: Recent trends in Access Regimes in Electricity and Natural Gas Networks*' (European University Institute, Florence Robert Schuman Center for Advanced Studies Louola de Palacio Programmer on Energy Policy 2011) <<http://fsr.eui.eu/Documents/WorkingPapers/Energy/2011/WP201109.pdf>> [Accessed at 23.12.2018]

⁶⁰ Commission's exemption decision on Eemshaven LNG –terminal, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2009_eemshaven_decision_en.pdf [Assessed at 23.12.2018]

second binding phase due to some external factors, the investor repeated the first phase, in an attempt to reach a secure assessment of the results⁶¹.

b) Second Phase -the so-called "binding-phase ": Provided that there is enough interest generated from the first phase, and only after the approval of the first-phase results by the NRA, the project developer will pass to the second and binding phase of the procedure. In this phase, the potential users will participate in the capacity allocation procedure in order to sign the binding agreements for booking the capacity, after they have agreed with the sponsors. In this stage, the NRA must set detailed rules about the second phase in order to ensure that the whole binding process will take place under fair, transparent and non- discriminatory conditions. In the case of *Shannon LNG* terminal, the project developer is granted a 25-year exemption for 100% of the capacity, without the Market Test process, as both sponsor and NRA argued that it was very difficult to carry out the Open Season process. This is because the principal supplier of the UK would have the opportunity to book extra capacity, strengthening his already dominant position⁶². Nevertheless, the Commission disagreed and requested the amendment of the decision in order for a formal market test to be conducted.

The NRA only after assessing the receiving results, which must be in accordance with those provided by the investors in the preparatory phase and provided that the project meets the criteria laid down in Article 36 of the Directive *cumulatively*, will eventually publish its decision. That decision must be specifically and exhaustively reasoned and the NRA shall communicate it both to the applicant and to the Commission for further approval. If the results of the Tests are totally different from the information provided by the investors, the Commission in conjunction with the NRA preserves the right of amendment, even withdrawal of the exemption decision. The Commission has the last word for the award of the exemption. An appeal against this decision may be submitted to the European Court of Justice seeking its annulment.

⁶¹Commission's exemption decision on Interconnector Greece-Bulgaria, [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2018_igb_decision_en.pdf [Assessed at.23.12.2018]

⁶²Commission's exemption decision on Shannon LNG terminal, [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2010_shannon_decision_en.pdf>[Assessed at. 30.12.2018]

7.3.2. The criteria for awarding an exemption

As the TPA comprises the general rule, the exemption granted to *major new gas infrastructures* has to be in accordance with the *necessity and proportionality principle*. Thus, certain criteria laid down in Article 36 of the Directive 2009/73/EC, are to be met. The following requirements must be *cumulatively* fulfilled, and the applicant has the burden of proof.

A) The investment must improve the security of supply and boost competition in the gas market;

(i) *Enhancement of competition* means that the new infrastructure must be *pro-competitive*. For the assessment of this requirement, the EU has adopted the above-mentioned market test procedure⁶³ as the most appropriate tool. One of the most crucial elements that must be taken into account in this process is the *investor's market share*, in order for the companies which already own an increased market share, not to empower it from the exemption decision.

As far as the *new infrastructure* is concerned, the Commission's stance is that the capacity share in the new infrastructure held by a dominant firm should be substantially lower than its market share⁶⁴; being aligned with ERGEG's strict approach, which supports that, the exemption given should decrease the dominant player's market position⁶⁵. In case that a dominant undertaking is the one who benefits from the exemption, the NRA should adopt the appropriate measures to ensure that the competition is not stifled.

At this point, it would be useful to clarify the definition of "*dominant position*", as the Commission's interpretation has been vague. According to Article 102 TFEU which constitutes the cornerstone of Competition Law, if a company has an appreciable influence on the competitive conditions of the markets and can largely disregard the competitive constraints, probably holds the *dominant position*. In its notable judgment

⁶³ Note 35 of the Recital of Directive 2009/73/EC.

⁶⁴ Commission of the European Communities. 'Commission Staff Working Document On Article 22 Of Directive 2003/55/EC Concerning Common Rules For The Internal Market In Natural Gas And Article 7 Of Regulation (EC) No 1228/2003 On Conditions For Access To The Network For Cross-Border Exchanges In Electricity – New Infrastructure Exemptions. (2009) (16) [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/sec_2009-642.pdf [Accessed 15.11.2018]

⁶⁵ Ibid 57

in *United Brands v Commission of the European Communities*, the European Court of Justice gave a fundamental interpretation of the “dominant position” under Article 102 TFEU: a ‘*position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers*’⁶⁶.

In order for the criterion to be applicable, the definition of the relevant market, in terms of *both* the geographical location *and* the structure of the market, is a prerequisite. For the calculation of the market share of an undertaking, those belonging to the same group of companies shall be considered together⁶⁷.

In the *OPAL pipeline case*, the European Commission stated that the exemption not only would not enhance competition, but it might worsen it in the Czech upstream wholesale market. More specifically, Russia was the only supplier given the difficulties of transport and therefore, the exemption would only reinforce Gazprom’s position, so the Commission rejected the application⁶⁸. In the case of the exemption of the *Trans Adriatic Pipeline (TAP)*, the Commission made one more distinction to the relevant product markets. It separated the “*upstream wholesale market*” regarding the sale of gas by the initial source to the resellers and the “*domestic wholesale and retail market*” regarding the sale of gas in the secondary market⁶⁹.

However, the elimination of competition is not required. Even the minimum degree of competition left in the markets is enough for a firm to be recognized as “*dominant*”. Nevertheless, for the fulfillment of the enhancement of the competition criterion, the increased dominant position of a firm in the market is not enough, a further *causal link*

⁶⁶ *United Brands Company and United Brands Continentaal BV v Commission of the European Communities Chiquita Bananas Case 27/76* [1978] European Court Of Justice, European Court Reports 1978 -00207 (European Court Of Justice).

⁶⁷ Energy Community Secretariat Opinion 1/2013 on the exemption of the “TAP Interconnector” from certain requirements under Directive 2009/73/EC by the Energy Regulatory Authority of Albania (ERE). (2013). Oil, Gas & Energy Law (OGEL), 14.8.2009, (No 211), p.p 94 et seq.

⁶⁸ Commission’s February 2009 exemption decision on OPAL case, amended in 2016 with Commission Decision on review of the exemption of the Ostseepipeline - Anbindungsleitung from the requirements on third party access and tariff regulation granted under Directive 2003/55/EC (the “OPAL Decision”), C (2016) 6950 Final, 28.10.2016.

⁶⁹ Commission’s decision in TAP exemption from TPA requirements, issued in Brussels, 16.5.2013[online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2013_tap_decision_en.pdf> [Accessed 22.12.2018]

between this position and its negative effect on the new infrastructure project must also be proved⁷⁰.

The European Commission stresses that such exempt infrastructure should, at least, provide significantly improved possibilities for non-dominant undertakings to enter the market concerned or to expand their market position. In fact, the Commission goes one step forward, requiring *not only the avoidance of increasing market share* of the dominant position undertaking *but also the dilution of its market power*. Generally, the purpose of the provision is for the exempted investment to give more opportunities to new players to enter the market. It should be noticed that several of the exemption requests are made by new competitors, whose entry into the market is likely to increase competition and thus should be encouraged. The Commission is more lenient to grant an exemption to *a new entrant*. Such was the case of *LNG terminal to Olt Offshore Toscana S.p.A* exemption decision, in which the Commission accepted that the project developer, as a new entrant to the Italian energy market, not only will enhance competition but he will also reduce the incumbent's (ENI S.A) market share⁷¹. In the case of *LNG Terminal in Porto Empedocle*, the Commission agreed that enhancement of competition will be achieved as the parent company of the project developer does not own or operate any LNG regasification terminal or any other natural gas import facility in Italy⁷². In *the TAP case*, the Commission accepted the enhancement of competition due to the fact that TAP's shareholders did not have market share in Italy and their entrance in Italy's market will further reduce ENI's (one of the dominant energy players in Italian market) market share⁷³.

Another means of eliminating the potential negative effects of the dominant position, also received by the market test procedure, is the implementation of *the capacity cap method*, meaning the maximum capacity the dominant players are allowed to occupy in the new infrastructure.

⁷⁰ Commission's Opal pipeline exemption Decision (Ibid 68), the link between Gazprom's dominant position and its impact on the Opal pipeline was insufficient.

⁷¹ Commissions' exemption decision of LNG terminal to Olt Offshore Toscana S.p.A, [online] Available at: <<http://ec.europa.eu/transparency/regdoc/rep/3/2015/EN/3-2015-72-EN-F1-1.PDF> [Accessed at 3.1.2019]

⁷² Commissions' exemption decision of LNG Terminal in Porto Empedocle, Italy, [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2012_porto_empedocle_decision_en.pdf [Accessed at 3.1.2019]

⁷³ Ibid 69

A point in need of clarification is the distinction that should be made between *the dominant player's market share* and *his share in the capacity holding in the new infrastructure*, as the competition is hampered only when *both* conditions are met. It is obvious from the Commission's decisions that an attempt has already been made mainly through the capacity cap method and the adoption of a stricter stance as far as the duration and capacity allocation mechanisms of the new infrastructure project are concerned. In the *Dutch LNG terminal Gate* case, the NRA ordered the project promoters to allocate a maximum of 50% of the primary capacity to any party that holds a dominant position in the natural gas market. Notably, the project promoters did not plan to reserve any capacity for them since they were not active in the gas supply business⁷⁴. At the same time, in the exemption decision concerning *Eemshaven LNG –terminal*, this cap reached 66% of the total capacity⁷⁵. Last but not least, in the most recent case of *Interconnector Greece-Bulgaria (IGB) decision*, the Commission, in order to prevent the establishment or the strengthening of a dominant position, set different capacity caps to the regional dominant players, whilst it forecast even the possibility of the combined market share held by two or more undertakings⁷⁶.

The Commission also moved from its initial lenient stance to a more rigorous one, stressing that partial exemptions must be preferred to full ones, especially regarding *both duration and percentage of capacity* of the exemption decision. In *Rovigo and Brindisi LNG terminal decision*, only 80% of the capacity was exempted, while the 20% is subject to rTPA⁷⁷. In the *CDF Suez case*⁷⁸ and *E.ON case*⁷⁹, the Commission proposed the immediate reduction of the shippers' capacity reservations below 50%, in favor of third parties, to a threshold that balances the investors and the competing interests,

⁷⁴ Commissions' exemption decision of Dutch LNG terminal GATE, [online] Available at:<https://ec.europa.eu/energy/sites/ener/files/documents/2007_gate_terminal_decision_en.pdf [Assessed at 4.1.2019]

⁷⁵ Ibid 60

⁷⁶ Ibid 61

⁷⁷ Commission's exemption decision on Rovigo Brindisi terminal [online] [in Italian] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2005_rovigo_decision_it.pdf [Assessed at 24.12.2018]

⁷⁸ Case COMP/39316 – Gaz de France [2009] Commission Decision of 31.2.2009, [online] Available at:<http://ec.europa.eu/competition/antitrust/cases/dec_docs/39316/39316_2298_1.pdf> [Accessed at 23.12.2018]

⁷⁹ Case AT39317 – EON Gas [2010] European Commission [online] Available at:<http://ec.europa.eu/competition/antitrust/cases/dec_docs/39317/39317_2139_3.pdf [Accessed at 23.12.2018]

and prevents competition distortion. The holder company in compliance with the Commission's proposals voluntarily accepted to reduce its share to long term reservation capacity. Besides, in the *BBL case*, the Commission asked the amendment of the exemption decision as far as the *reverse flows* of the new infrastructure were concerned⁸⁰, in an attempt to eliminate the economic obstacles for the third parties on the implementation of the exemption regime. The ability of the project to develop new markets that have not hitherto existed strictly enhances competition.

b) Enhancement of the security of supply. Undoubtedly, the security of supply benefits from the increase in capacity that any new investment brings. But could any increase in capacity fulfill the security of supply criterion and thus lead to an exemption decision? The Commission firmly believes that the security of supply is closely linked with the diversification of the supply sources. This associates with the project's ability to bring gas from new supply sources, new gas suppliers and last but not least develop new routes in the market. It is also argued that as LNG diversifies the natural gas sources through the import of gas from Qatar, Nigeria, or Trinidad, abuse of dominant position will be the only reason for the EU's exemption refusal⁸¹. In this context, FSRU is more likely to fulfill the criteria to receive an exemption decision, due to its capacity to receive gas from a variety of locations and alternative suppliers too, performing the main scope of the 3rd Liberalization Package⁸². Nevertheless, recently in the *Interconnector Greece-Bulgaria (IGB) decision*, the Commission has exhibited a slightly different approach. It examined even the *origin of gas* and indeed analyzed the origin of gas suppliers of each market⁸³, proving that the proportionality principle is firmly implemented.

B) The investment could not be implemented without the exemption due to the level of risk;

Investing in new gas infrastructure entails enormous costs and economic risks, as these

⁸⁰ Commission amendment request in the BBL case of July 12, 2005, [online] Available at http://ec.europa.eu/energy/gas/infrastructure/doc/bbl_decision_ec.pdf [Accessed at 23.12.2018]

⁸¹ K. Talus, 'New Infrastructure', *EU Energy Law and Policy a Critical Account.* 1st edn, (2013), Oxford University.

⁸² S. Komlev, "Third Energy Package and its Impact on Gazprom Activities in Europe" (2011). [Speech]

⁸³ Ibid 61

new technologies have a very high capital intensity and a long development process accompanied by a very long payback period while facing high geological risks at the same time. Therefore, financial institutions in order to finance the projects ask for feasibility studies and for the business plans to be based on realistic scenarios and on effective strategies, too. Apart from those, concrete plans for the mitigation of the risks and uncertainties in the long term are also needed⁸⁴. Due to the high costs of the construction and implementation of these projects, in combination with the lengthy and time - consuming process, the projects are financially viable only if their capacity is exempted. The Commission in order to assess the “risk” criterion considers the investment as a “sunk cost”⁸⁵ and recognizes two main possibilities: i) the risk of infrastructure obsolescence and ii) the risk of the changing costs and/or revenues in the future, especially referring to the risk of changes in the regulatory framework, (i.e. tariff methodologies⁸⁶). Also, the national legal framework must be taken into consideration, especially regarding the rTPA or nTPA regime, as the latter offers higher and more secure amortization. This is the case of *Dambořice* decision, in which the Commission withdrew the NRA’s exemption decision due to lack of the investment risk criterion, as the Czech Republic implemented the nTPA⁸⁷. Risks resulting from the economic and financial crisis have been of fundamental importance not only for granting an exemption but also for amending an already granted one⁸⁸. In the *Nabucco case*, a reference about the political risk was made, given that the interconnector was going to cross more than one country with the differentiated legal framework and

⁸⁴ Gennimatas, Honorary Vice Chairman at European Investment Bank, P. (2008). “*Energy and Policy in SE Europe and the World*”. Pedio Publications.

⁸⁵ A sunk cost is a cost that has already been incurred and cannot be recovered (also known as retrospective cost)

⁸⁶ *Ibid* 67

⁸⁷ Commission’s exemption decision of an Underground Gas Storage Facility in Dambořice, Czech Republic, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2011_damborice_decision_en.pdf [Assessed at 3.1.2019]

⁸⁸ The review of the exemption of the Ostseepipeline - Anbindungsleitung from the requirements on third party access and tariff regulation [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2016_opal_revision_decision_en.pdf [Assessed at 3.1.2019]

political schemes, engendering high-level instability⁸⁹. It should be highlighted that even if a project is considered to be a PCI, it does not guarantee that the investment recovery could be covered by the tariffs in rTPA regime. The Commission maintains that the exemption duration should be equal to or less than the expected period for cost recovery of the new infrastructure⁹⁰.

C) The owner of the infrastructure must be a separate firm at least legally from the Transmission System Operator (TSO) in whose system it will operate;

Under this criterion, only the *legal unbundling* is required. The new infrastructures⁹¹, in which the owner of the transmission system is also appointed as the TSO, must follow the Ownership Unbundling (OU) model⁹². In case he does not, he must apply for the exemption from OU model⁹³. This concerns mainly the *functional unbundling*⁹⁴, referring to the exercise of control over and rights in transmission operator *and the* exercise of control over and rights in an undertaking performing any functions of generation or supply. The definition of “*control*” is clearly given by the EC Merger Regulation⁹⁵. “*It is the degree of the decisive influence the relevant legal relationship has on the decision-making procedure in the project developer company which counts*”⁹⁶.

In other words the people involved in the administrative functions of new infrastructure are not allowed to participate in any way in other branches or

⁸⁹ Commission’s exemption decision of Nabucco pipeline, [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2013_nabucco_decision_austria_en.pdf> [Assessed at 3.1.2019]

⁹⁰ Ibid 51

⁹¹ That is constructed after the adoption of 3rd Energy Package, article 9 Directive 2009/73/EC

⁹² As this model is laid down in ar.9 (1) Directive 2009/73/EC

⁹³ Ar. 17 (1) of Regulation 714/2009 and Article 36 (1) (c) of Directive 2009/73/EC

⁹⁴ The model constitutes of 3 characteristics: a) the companies which contribute with generation and supply activities should be separated from those dealing with transmission ones. b) There are not common shareholders between generation/supply activities and transmission system operators and c) there should not be common persons in the management or board of directors of the both companies.

⁹⁵ Ar. 2 (2) of Regulation 139/2004 (the EC Merger Regulation) defines control as: “*Rights, contracts or any other means which, either separately or in combination and having regard to the considerations of fact or law involved, confer the possibility of exercising decisive influence on an undertaking*”.

⁹⁶ T. Panagos. “*Unbundling of Transmission System and Transmission System Operator according the Third Energy Package*”. In: T. Panagos, ed., *Unbundling of energy companies* (In Greek), 1st ed. (2011) Athens -Thessaloniki: Sakkoulas S.A, pp.147-149.

departments or in any other vertical integrated undertaking and are not allowed to have vested interests that obstruct the independent and objective fulfillment of their duties. This criterion is of paramount importance for the non – EU investors, offering them the chance, through the exemption, to enter the EU market provided that legal unbundling is implemented at least⁹⁷. Moreover, this requirement incorporates the rationale of Directive to grant partial derogations to such undertakings which will transport gas from abroad to the EU for the security of supply purposes⁹⁸. After 3rd TEP, the exemption from unbundling is granted to *TAP and IGB interconnectors*, imposing to the investors the implementation of functional unbundling and also to be certified under the provisions of Ar.10 and 11 of the Directive based on the Independent Transmission Operator (ITO) model^{99 100}.

D) In order to have access to the infrastructure users must bear the cost;¹⁰¹

The applicant of the exemption has the right to charge the users of the exempted infrastructure a tariff in order to recover his capital as well as the operating costs. This tariff is set in the capacity contracts and must be applied equally, in a transparent and fair way to all users in order for them not to be discouraged to access the system.

E) The exemption is not harmful neither to the functioning of the EU's internal gas market nor to the transmission system to which the infrastructure is connected¹⁰².

Even though this condition also refers to the effects of the project on competition similarly as the first one, they are not identical, as the latter focuses on the possible *negative effects that the exemption decision itself could have on the system (i.e. congestion problems, unused capacity problems*¹⁰³ etc.). Congestion is classified as

⁹⁷ M. T. Dralle. “*Exemptions from Unbundling*” . In: Michael T. Tilman, ed., *Ownership Unbundling and Related Measures in the EU Energy Sector Foundations, the Impact of WTO Law and Investment Protection*. Switzerland Springer Nature: 1st edn (2018), pp.54-60.

⁹⁸ See 35th note of the Recital of Directive 2009/73/EC

⁹⁹ Ibid 61

¹⁰⁰ Ibid 69

¹⁰¹ Article 36 (1) (d) of Directive 2009/73/EC

¹⁰² Article 36 (1) (e) of Directive 2009/73/EC

¹⁰³ Article 2 par.1 n. 4 of “Regulation (EC) No 715/2009 of the European Parliament and of the Council of July 2009 (OfJ L211/40 /14.8.2009)

physical, which occurs when the capacity is fully booked and any additional demand cannot be satisfied, thus the investment in additional capacity is provided, *and contractual* occurs when the capacity is fully booked but part of it remains unused and there is still demand for capacity. This congestion can occur either in the long-term, when booked capacity remains constantly unused for long periods or in the short-term when part of the booked capacity is occasionally not nominated¹⁰⁴. *The exemption decision must ensure that the exemption of the project does not prevent the entrance to competitors, by ensuring that sufficient import capacity is left to them*¹⁰⁵. In order to prevent detrimental competition, mainly caused by the contractual congestion problems, an effective tool is the implementation of “*Use it or Lose it (UIOLI) principle*”. That refers to the project owner’s option to use the agreed capacity, for which primary exclusive rights have been given. In case of its’ underutilization, he should be obliged to offer it to the market in an open, transparent and non-discriminatory procedure, laid down under the approval of the NRA. From that aspect, the gas market is significantly more accessible by potential new entrants¹⁰⁶. In order for this situation to be avoided, the capacity left unutilized could be traded in the secondary market.

7.4. A general overview of the exemption decisions in Europe

The exemption for new gas Infrastructures has been granted till today to 8 pipelines, and to 13 LNG Terminals¹⁰⁷. The rationale behind all these decisions is to tempt private companies to invest in so much needed new infrastructure for an integrated and competitive gas market, and finally a pan–European network. An overview shows that even though the Commission’s first approach was more lenient and flexible, throughout the years it has proved to be increasingly demanding, seeking an in–depth

¹⁰⁴ Article 2 par. 1 n. 21, 23 of “Regulation (EC) No 715/2009 of the European Parliament and of the Council of July 2009 (OfJ L211/40 /14.8.2009)

¹⁰⁵ Commission’s exemption decision of the “Gazelle” interconnector, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2011_gazelle_decision_en.pdf [Assessed at 3.1.2019].

¹⁰⁶ Ibid 89

¹⁰⁷ European Commission Directorate-General for Energy, ‘*Pending Notifications of National Exemption Decisions*’ (2018) [online] Available at <https://ec.europa.eu/energy/sites/ener/files/documents/exemption_decisions2018.pdf> [Accessed at 17.12.2018].

analysis of the project's strict consistency with the criteria stipulated in Article 36 (1) of the Directive. The Commission seems to attempt to seek *“the right balance between dilution of incumbent’s market power at the expense of new entrants and new investment with high levels of risk required for secure, diverse and competitive gas supply”*¹⁰⁸.

8. THE GREEK NATIONAL LEGAL FRAMEWORK ABOUT INDEPENDENT SYSTEMS OF NATURAL GAS (INGS)

The Greek legislator was at the forefront of the establishment of the legal framework for the FSRU. Even before its construction, a sufficiently detailed legal framework for the operation of such facilities was already introduced. In accordance with its provisions, FSRU constitutes an Independent System of Natural Gas (hereinafter INGS/ASFA), which is not integrated to the National Transmission System of Natural Gas, regardless of its interconnection with it¹⁰⁹. The construction and ownership right of ASFA is permitted only after a special license which is granted exclusively to legal persons and only after a NRA’s decision¹¹⁰. In case the license confers both construction and possession rights in the transmission system, it is granted only to legal entities, which are specially certified in accordance with the requirements of Directive (EU) 2017/1132, and those of Natural Gas Licensing Regulation¹¹¹. The ASFA Operation license is granted exclusively to the ASFA license owner/applicant unless the ASFA has been granted an exemption decision¹¹². In this case, the ASFA Operation

¹⁰⁸ E. TOKGÖZ. *“Third Party Access Regime and Building Competitive Gas Markets”*. Institute for Energy Markets and Policies (2014) (EPPEN).

¹⁰⁹ Art. 2 (2) (a) of Law 4001/2011 *“For the operation of the energy markets of Electricity and Natural Gas, for research, production and transmission networks of hydrocarbons and other arrangements”* [in Greek] (OfG A’176/22.08.2011)

¹¹⁰ Art. 74 of Law 4001/2011

¹¹¹ Art.61 par.1 & art.62 of Law 4001/2011, and Decision 178065/2018 NG Licensing Regulation, (OfG B’ 3430/17.8.2018)

¹¹² According to the art. 36 (1) of Directive 2009/73/EC

license is granted depending on efficiency and economic balance to an entity *other than* the ASFA's licensee¹¹³.

8.1. Licensing criteria and the procedure for granting

In order NRA to grant an ASFA license, it must take the following criteria into account¹¹⁴:

- To serve the public interest, and particularly aiming at improving infrastructure in specific regions suffering from a lack of access to natural gas, the enhancement of the country's security of supply along with environmental protection.
- The applicant's special characteristics will be assessed; mainly regarding its technical and financial capacity, which strongly guarantees the effective, reliable and secure operation of the whole project.
- The enhancement of competition in the natural gas market, especially as far as the implementation of the TPA principle is concerned.
- The demand that the new investment will meet and the technical quality, the financial and commercial viability of the project along with its credibility.
- In case the license provides both construction and ownership rights over the transmission system, all the criteria referring to unbundling of the TSO's must be fulfilled. At this point, it must be clarified that even if the ownership unbundling conditions are met, the licensee is still obliged to follow the certification processes as an ASFA operator¹¹⁵.

The above list set by the Greek legislator is *indicative but non-exhaustive*, meaning that NRA may request any other document they deem necessary in the discharge of its duties. In any case, the criteria are *cumulative*, so that the lack of even one will lead to the rejection of the application.

¹¹³ Art. 3(3) and ar.26(2) of NG Licensing Regulation

¹¹⁴ Art. 74 (2) of Law 4001/2011 [in Greek] (OfG A' 179/22.8.2011)

¹¹⁵ Art. 64 and 65 of L.4001/2011

The law 4001/2011¹¹⁶ specifies the minimum of the information needed for the issue of the license. If deemed necessary, additional conditions can be asked by NRA. The latter has the exclusive right for the amendment of the license, especially in case of significant extensions of the installation, or any other modification to the technical characteristics, according to the requirements set in the NG Licensing Regulation¹¹⁷. The exact procedure and the requirements for the change of the licensee or for modifications in its shareholder structure are also regulated there.

The license is granted after an application but it could also be granted as the result of a public tender only if certain conditions are met¹¹⁸.

An overview of the procedure shows that the national legislator regarding the authorization of ASFA license granting has empowered NRA, thus its decision must be specifically and exhaustively reasoned. Moreover, immediately after having been adopted, it shall be communicated both to the applicant and to the Commission for further approval, while it must be announced in the NRA's site.

8.2. The exempted regulatory regime according to Law 4001/2011.

On transposition to the national law of the Article 36 of the Directive 2009/73/EC, the Article 76 Law 4001/2011 in conjunction with Article 23 of NG Licensing Regulation stipulates that the applicant of the ASFA license could also apply for an exemption decision from the OU obligation *or* from the TPA principle with the application for the ASFA license or with the one for its amendment. Article 76 refers directly to article 36 of the Directive for the implemented criteria without setting further requirements.

In the author's view, despite this clear reference, the Law 4001/2011 still causes some confusion and interpretation questions; The article states in some parts that the applicant could apply *alternatively* for exemption from ownership unbundling *or* TPA obligation¹¹⁹ and in others that this option is offered cumulatively¹²⁰. The solution

¹¹⁶ Article 74 (4) of Law 4001/2011 (OfG A' A' 179/22.8.2011)

¹¹⁷ Ibid 111

¹¹⁸ laid down in Article 75 of Law 4001/2011

¹¹⁹ Ar.76 (1) L. 4001/2011 and Ar. 23 (1) of NG Licensing Regulation

maybe will be given in the explanatory memorandum of the law where the preferred option is the cumulative one (refers “*but also*”)¹²¹.

9. THE ALEXANDROUPOLIS FLOATING AND REGASIFICATION TERMINAL

As a case, the Alexandroupolis FSRU will be examined as it constitutes an innovative project and a promising private initiative, capable of changing ultimately the country’s financial and energy situation.

9.1. Description of the project

The LNG Terminal in Alexandroupolis northern Greece is developed using the FSRU Technology in 17.6km southwest of Alexandroupolis port, an offshore distance of approximately 5.4 nautical miles from the nearest shore and will be the 3rd one in Europe¹²² and the 2nd point for the import of LNG in Greece, after the Revithousa LNG Terminal. The project is developed by the private entity Gastrade S.A., a company established under Greek Law for developing, financing, managing, constructing, owning and operating on a long-term basis the project.

The project consists of: i) a floating storage regasification unit for the import, storage and re-gasification of LNG, which will be moored offshore the Alexandroupolis port with storage capacity of 170,000 m³, capable of supplying the Greek National Natural Gas Transmission System (NNGTS) with up to 6.1 bcm of natural gas annually ii) a 28km of a subsea and onshore gas transmission pipelines, which will connect the FSRU to the NNGTS and through which the degasified LNG will be delivered to the final consumers to the Greek market and the wider regional markets of southeastern Europe (i.e. Bulgaria, Romania, Serbia, Hungary but also Ukraine) iii) a metering and regulating Station, which will be constructed and operated by DESFA¹²³, near the

¹²⁰ The title of Ar.76 L. 4001/2011 and also Ar. 23 (4) of NG Licensing Regulation, (both possibilities are included).

¹²¹ Preamble of Law 4001/2011 Article 76.

¹²² Ibid 15

¹²³ The Greek Transmission System Operator

connection point of FSRU with the NNGS and iv) a compressor station at Kipoi, allowing the flow of gas, from Turkey to the NNGS, and after the FSRU is put in motion, it will inject gas to the NNGS at higher pressure¹²⁴.

Fig 2 below depicts the exact position of the Alexandroupolis ASFA, the pipeline transmitting natural gas to the new import station of the NNGTS and the existing route of the national transmission system.



Fig. 2: Source Gas Trade S.A.

The Alexandroupolis FSRU is of paramount importance first at a national level, as it is included in the 2017-2022 National Natural Gas Market Roadmap¹²⁵ and among the ten priorities of National Energy Strategy¹²⁶, but also at European level, thus it is included in the 1-3rd list of EU Project of Common Interest (PCI). Consequently, it is financed by the Connecting Europe Facility (CEF) with the amount of EU funds reaching €1,755,000 for a FEED (Front – End Engineering & Design) study, preparation of the engineering

¹²⁴ More technical details at Gastrade s.a. [online] Available at: <http://www.gastrade.gr/en/alexandroupolis-ings/the-floating-Ing-reception,-storage-and-regasification-unit.aspx>. [Assessed at 22.1.2019]

¹²⁵ Decision No 78 of the Government Council of financial policy “2017-2022 National Natural Gas Market Roadmap” (Official Gazette B/ 59/18.1.2018)

¹²⁶ G. Maniatis, 'Ten Priorities of National Energy Strategy' Greek Energy 2018 [online] Available at <https://issuu.com/citroniogr/docs/greek_energy_2018> [Accessed at 26.6.2018].

procurement and construction process¹²⁷. A close interest has been expressed also from energy players at cross-Atlantic levels.

It is worth mentioning that the project is fully licensed; *Gastrade* is among the first companies operating in Greece to be granted a license for an Independent Natural Gas System (hereinafter ASFA license) from Ministry of Environment, Energy and Climate Change with the prior consent of the Greek Energy Regulator (RAE)¹²⁸. Moreover, all safety conditions are met and are issued the necessary decisions; i) for Environmental Impact Assessment Approval ii) for granting access to shore iii) for granting access to the sea and seabed iv) Installation Act for the onshore high pressure pipeline and v) Installation License for the construction¹²⁹. According to the company's time schedule, after an extension of 6 months delivery time, Commercial Operation Date for the project is planned for 4Q20. The Final Investment Decision (FID) is expected for 4Q2019

9.2. Project's current situation

The project was initially promoted by "*Gastrade SA*", a company of the Greek conglomerate Copelouzos Group, but it is expected to be founded by a "*consortium*". At 2016 *GasLog Cyprus Investments LTD*, a 100% subsidiary of GasLog Ltd, a NYSE listed company, an international owner, operator and manager of LNG carriers with a considerable LNG fleet¹³⁰, acquired a 20% stake at *Gastrade's* share capital. Accordingly, other important companies are in the process of participating in *Gastrade's* share capital. *DEPA S.A* has signed an agreement with *Gastrade S.A* partaking in its share capital with 20%¹³¹. The latter is divided in two main sectors: the commercial, dealing with supply, wholesale and retail and the infrastructure, which has

¹²⁷ European Commission: <http://ec.europa.eu/energy/maps/pci_fiches/pci_6_9_1_en_2017.pdf> [Accessed at 22.1.2019].

¹²⁸ RAE.gr. Energy Regulatory Authority [in Greek] [online] Available at: http://www.rae.gr/site/categories_new/regirsty/gas/licenses/info1.csp?viewMode=normal [Accessed at 24.1.2019]

¹²⁹ 'Licenses' (*Gastrade.gr*, 2019) <<http://www.gastrade.gr/en/alexandroupolis-ings/licenses.aspx>> [Accessed 24.1.2019]

¹³⁰ Gaslogltd.com [online], "*On the Water Fleet*" [online] Available at: <https://www.gaslogltd.com/fleet-list/> [Assessed at. 24.1.2019]

¹³¹ The agreement was signed at "*The Southeast Europe Energy Forum (Hellenic Association for Energy Economics (HAEE) 2018*)" <<https://www.haee.gr/events/international-events/2018/southeast-europe-energy-forum/proceedings/>> [Accessed 31.1.2019]

as an objective the distribution and the participation in strategic infrastructure projects. Additionally, the *Bulgarian Energy Holding EAD Bulgartransgaz (BEH)* a wholly state-owned company, with a strong presence in the Bulgarian energy market, dealing with electricity generation, supply and transmission, natural gas transmission, supply and storage and coal mining in Bulgaria has expressed interest in acquiring a 20% shares in the project from the operator Gastrade S.A.¹³². As for the fifth equal stake of 20%, from the 40% of Gastrades' current stake, it is expected to be acquired by a newcomer. Among US firms who have expressed interest, only the Cheniere LNG has been named.

After receiving the ASFA license Gastrade S.A applied to RAE requesting to be granted an exemption of the project from the provisions of articles 9, 32, 41(6), (8) and (10) of Directive 2009/73/EC in combination with the amendment of its ASFA license¹³³.

Following the procedure described above, Gastrade launched the first non-binding Expression of Interest Phase (EoI) of the Market test which was performed under the approval and supervision of the RAE and in accordance with its guidelines for the management and allocation of the capacity on the project in line with art.36 (6) of the Directive¹³⁴. The procedure took place at 30.10.2018 and has been extremely successful so that there was an extension in the deadline until 31.12.2018. Accordingly, the project will proceed to the second binding phase, after the approval of the guidelines by RAE.

As regards the results of the market test, the company announced that the project drew bids from 20 companies; both regional and international gas players expressed their interest, to the extent that the capacity reservations at the project exceeded the technical ones. A great deal of commercial interest is a significant indicator of the project's commercial viability and development prospects. On the one hand, it fully

¹³² Bulgarian Energy Holding (2018). "Cooperation between DEPA, BEH and GASTRADE to promote the commercial operation of the "LNG Terminal in Northern Greece" in Alexandroupolis". [online] Available at: <https://www.bgenh.com/en/posts/56/Cooperation-between-DEPA-BEH-and-GASTRADE-to-promote-the-commercial-operation-of-the-%E2%80%9CLNG-Terminal-in-Northern-Greece%E2%80%9D-in-Alexandroupolis.html> [Assessed at 24.1.2019]

¹³³ According to ar.23 of the NG Regulation

¹³⁴ No 911/25.9.2018 and No1027/18.10.2018 decisions announced at RAE's site.

reflects the need of the region for alternative energy sources of natural gas supply; On the other hand, it demonstrates the vital role of LNG in the energy mix globally. Quite remarkable was the increased activity of mostly US players for capacity reservations. In the author's view this relates both with the situation of the Greek energy market, which till now is "monopolized" by the Russian giant (2.8 bcm/a is imported by Russia according to RAE), thus it is attractive for new competitors to enter a "virgin" newly liberalized market but also with the geostrategic position of the project.

9.3. Assessment of the project under the requirements of Ar.36 of 2009/73/EC Directive.

The Alexandroupolis FSRU constitutes undoubtedly *a major new gas infrastructure*, not only due to its cost, estimated approximately to €370 million but also to its promise of increasing market capacity at least up to 6.1 bcm/p.a of natural gas, not to mention the quantities from its further interconnections.

The project concentrates all the prerequisites to enhance the *security of supply* through multiple supply sources. An overview of the Greek gas market can easily prove that new natural gas quantities, will improve the reliability and flexibility of the NNGTS. According to the data, in 2016 Greece's natural gas production was 0.009 bcm, while the total consumption reached 4.1 bcm. The country is fully dependent on imports, of which Russia holds dominant position (65% of total gas imports). Other gas suppliers are Algeria, (import LNG at 17%), and Turkey (with 16% of Greece's total imports)¹³⁵.

The results of the market test and the goals of the operator too show that the FSRU aspires to attract firstly imports of US gas. Actually there seem to be the right conditions for this. The USA is transformed from gas importer to one of the biggest gas exporters, increasing global market share and with LNG abundance in conjunction with "shale" gas revolution, Alexandroupolis FSRU is being regarded as an entry point and a

¹³⁵ Institute for Energy for South -East Europe (2018). Gas Supply in SE Europe and the Key Role of LNG. [online] Athens, December 2018: Institute of Energy for SE Europe (IENE). [online] Available at: <https://www.iene.gr/articlefiles/gas%20supply%20in%20se%20europe%20and%20the%20key%20role%20of%20lng%20test.pdf> [Accessed 30.1.2019].

new market for American gas into the Balkans and South East Europe. These plans are aligned with EU plans to strengthen EU-U.S. strategic cooperation in the energy sector¹³⁶. There is also the point that Greece will need to increase gas imports from Turkey commencing January 2020; This comes as a result of the interruption of Russian Gas supplies via Trans Balkan pipeline, which today delivers gas from Ukraine to Turkey, transiting Moldavia, Romania, Bulgaria and Greece, due to US sanctions to Gazprom¹³⁷. This provides a unique opportunity for Greece, through FSRU, to emerge as an alternative solution for gas supply to these countries, offering both a new source of supply and a new route for the country and Europe too. Furthermore, with LNG, Greece bypasses Turkish territory, reducing also its own dependency on Turkey. Not to mention that generally Turkey after the recent turmoil is politically unstable and this highlights Greece as a preferable country for investments¹³⁸. It is the chance of Greece to undertake a leading role instead of Turkey in the Mediterranean¹³⁹.

The ability of the project to be connecting *to multiple supply routes* brings security of supply not only to Greece but the wider region too. The new natural gas quantities will enhance the security of supply in the Balkan markets and promote trans-European gas networks, increasing the diversification of energy sources of Central and South Eastern Europe. Except for its connection to the Greek NNGTS, a fundamental factor is also the potential for a future connection of the FSRU to existing or under construction interconnectors regionally. These are: i) the Interconnector Turkey –Greece (ITG), ii) the under construction Trans Adriatic Pipeline (TAP), ii) the Interconnector Greece - Bulgaria (IGB) and iii) the Interconnector Greece –Italy.

The most important contribution of the project is that it will become part of EU's strategic goal not only to develop but to expand the *Southern Gas Corridor*, aimed at

¹³⁶ European Commission, (2018) 'EU-U.S. Joint Statement of 25 July: European Union Imports of U.S. Liquefied Natural Gas (LNG) are on the rise' Brussels, 9 August 2018' <<https://ec.europa.eu/energy/en/news/eu-us-joint-statement-25-july-european-union-imports-us-liquefied-natural-gas-Ing-are-rise>> [Accessed at 22.11.2018]

¹³⁷ K. Stambolis, "Turkey, Greece and Natural Gas" (2017). European Business Review [online] Available at: <http://www.europeanbusiness.gr/page.asp?pid=3417> [Accessed 30.1.2019].

¹³⁸ S. Palaioyiannis, 'The Fourth Corridor Gas Pipelines Perspectives, Uncertainties And Implications For Se Europe and Greece' (IENE 2009) [online] Available at <https://www.iene.gr/articlefiles/wp_paleoyannis_no10%20final.pdf> [Accessed 24.1.2019]

¹³⁹ M. Schröder/, M. Bettzüge/, W.Wessels, "Turkey as an energy hub? Contributions on Turkey's Role in EU Energy Supply". (1st ed. (2017) Baden -Baden: Nomos).

connecting EU to new sources of gas from the Caspian Region (i.e. Azerbaijan, Iraq, Turkmenistan, and the Eastern Mediterranean Basin). Many countries in Central and South East Europe are dependent on a single supplier (Russia) for most or all of their natural gas. Initially, approximately 10bcm of gas will flow along this route when it opens in 2019-2020. Given the potential supplies from all the above countries, the EU aims to increase this to 80-100 bcm/p.a of gas in the future¹⁴⁰. This project will help these countries diversify their supplies, constitute an alternative gas gate away from Russia thus it is also strongly supported by the US¹⁴¹. The *Southern Gas Corridor* aims to expand infrastructure that can bring gas to the EU and from other supply sources and routes. This *expanded South Corridor* includes an even more ambitious plan, the transport of gas to FSRU from the *East Med Pipeline*, which could also be considered as a vital gas supply route¹⁴².

The Project will operate in combination with the *Interconnector Greece-Bulgaria (IGB)* and *TAP*¹⁴³. As for the *IGB*, which is planned for commercial operation within 2020, natural gas will be transmitted from Greece to Bulgaria, to Serbia, to Romania and Hungary. The project aims to provide an alternative source of gas supply to South East European markets and will offer to the regional security of supply, diversification of gas routes and sources, price flexibility and enhanced competition. It will offer access to LNG and contribute to European gas market integration. The connection of all these countries constitutes the “Vertical Corridor” which presupposes cooperation between Greece, Bulgaria, Romania and Hungary, for the free flow of gas from south to north and vice versa¹⁴⁴. The Alexandroupolis FSRU could be the “backbone” of the *Vertical Corridor*, enhancing even more the country’s position in the energy map.

What should not be overlooked is the interconnectors’ ability for *reverse flows* that provide a possibility for the new infrastructure to operate in two directions. This is a

¹⁴⁰ European Commission, ‘Gas and Oil Supply Routes - Energy’ [online] Available at: <<https://ec.europa.eu/energy/en/topics/imports-and-secure-supplies/gas-and-oil-supply-routes>> [Accessed 31.1.2019].

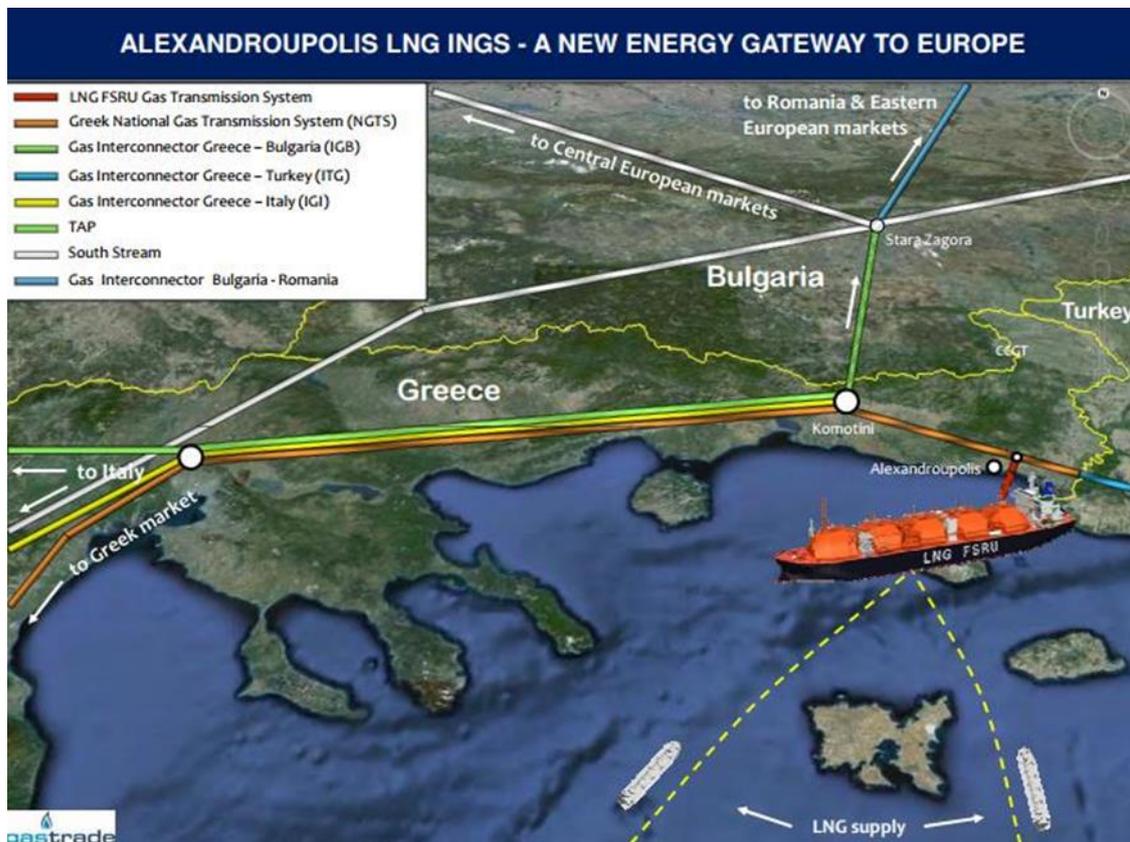
¹⁴¹ Ibid 136

¹⁴² Ibid 135

¹⁴³ Crucial point is that both have been granted exemption decisions from Commission in line to art. 36 (1) of Gas Directive

¹⁴⁴ Institute of Energy for SE Europe (IENE), ‘The Vertical Corridor: “From The Aegean to The Baltic” (2015)’ <<https://www.iene.eu/articlefiles/the%20vertical%20corridor%20-%20from%20the%20aegean%20to%20the%20baltic.pdf>> [Accessed 30 January 2019].

critical tool in mitigating security of supply risks and allowing gas flowing freely, as it connects gas systems to additional entry points, including indirect access to LNG terminals. Thus the Commission has paid particular attention to this element, including in its exemption decisions special provisions for the management of the reverse flows¹⁴⁵. The importance of the reverse flows arises, moreover, from the fact that the alternative supply routes enhance trading and increased hub liquidity¹⁴⁶. Therefore, the Alexandroupolis FSRU provides one more chance to the country to be converted in an energy hub of Eastern Europe, and it is crucial to take the opportunity that that affords, otherwise other neighboring countries will¹⁴⁷. Fig 3 below depicts the potential interconnections of the project. The Alexandroupolis ASFA very pertinently is being characterized as “A new gateway to Europe”.



¹⁴⁵ Ibid 69 & 80

¹⁴⁶ European Commission, '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' (2014) [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/20140528_energy_security_study.pdf> [Accessed 30.11.2018].

¹⁴⁷ Reuters, 'Bulgaria launches gas hub feasibility study' (2018) <<https://www.reuters.com/article/bulgaria-gas-hub/bulgaria-launches-gas-hub-feasibility-study-idUSL8N1QW5VE>> [Accessed 31 January 2019]

Fig. 3: Source Gastrade S.A

The Alexandroupolis FSRU is able to *promote competition* to the benefit of the end users. Not only the entrance of new suppliers to the Greek market but even more the opportunity of the existing players to diversify their gas supply portfolio are elements added as positive effects of the project. According to the market test results, the expressed interest for delivering gas on the Greek market reached the 12.2 bcm/p.a, meaning that it surpasses the country's gas demand. For the avoidance of the development or strengthening of dominant market position, the market share of the players that reserved capacity needs to be considered. Neither BEH nor Gastrade *itself*, for example, has any presence in any of the Greek gas markets. In any case, as for these players that have already strong position in the Greek market, (i.e. DEPA) it would be appropriate to implement the "capacity cap" method that is to set a maximum amount of capacity that these players could reserve to the project. Another important point for the effectiveness of the project is the *pricing flexibility and diversification on pricing formulas* that will bring the entrance of more LNG to the Greek and SE Europe market. The investment is willing to give an economic boost to the Greek economy and the whole region generally in a very difficult period for the country. It is characteristic that the project is fully supported by the local community due to its contribution to new employment opportunities.

As for *the level of risk attached to the investment*, due to the estimated cost of the project¹⁴⁸, the investment could not be implemented without an exemption. It is crucial that the Alexandroupolis FSRU constitutes a fully private initiative, which is not co-financed by any national authority, neither is part of the Ten –Year national plan of the TSO. Due to the scale of it and the risks entailed (i.e. even the weather conditions could affect the transport of the supplies) the project's shareholders must be assured about the return on investment with the return on equity ratio. The economic viability of the project has already been proved from the impressive participation to the EoL phase, so there is no case of non-use of the infrastructure. An additional boost of the feasibility of the project should come from the fact that it is considered as PCI and an

¹⁴⁸ Approximately €370 million in accordance with company's data.

internationally recognized company, Wood Group has secured a FEED contract¹⁴⁹. In the author's view, in order to mitigate any risk, the exemption could be granted for a limited period, equal to the cost recovery period of the project.

To the same direction and in order for the FSRU's exemption *not to be detrimental to competition* some measures related to congestion and capacity allocation problems must be adopted. Except for the improvement of the operation of the existing facilities due to its connection to the national transmission system, in order to prevent any negative effect to the functioning of the regulated system, an effective proposal should be to avoid the allocation of capacity to one and the same market operator. Another effective for the competition measure could be the NRA to grant the exemption from regulated tariffs only for the forward flows and not for the reverse ones. As described above all the interconnectors which will be connected have the bi-directional function, so the reverse flows could be subject to the regulated tariffs.

The prerequisite *of legal unbundling* from TSO is also fulfilled, as Gastrade S.A is a distinct and independent legal person from DESFA S.A, the existing Greek TSO of National Transmission System. As regards the operator of the ASFA, due to the exemption application another entity than Gastrade S.A should be appointed¹⁵⁰. Moreover, as mentioned above, the entity, on the one hand, has to be certified according to the provisions of ar.10 and 11 the Directive, on the other hand, even if it has applied for exemption from the unbundling rules, it has to deal with the issue of *functional unbundling*.

10. THE FURTHER GEOPOLITICAL IMPLICATIONS OF THE PROJECT

The project seems to have further geopolitical implications, which should not be overlooked. A lot of people argue that even the designation of the town of Alexandroupolis for the development of such a project is by no means a random

¹⁴⁹ Wood Group (2017). Wood Group secures FEED for Alexandroupolis LNG project in Northern Greece. [online] Available at: <https://www.woodgroup.com/press/press-releases/2017/wood-group-secures-feed-for-alexandroupolis-lng-project-in-northern-greece> [Assessed at 25.1.2019]

¹⁵⁰ *ibid* 113

choice; it constitutes the crossroad between the three continents. It's not only that the geographic position, the town's position in the energy networks, converts it in a field of the "hybrid battle" raging between the US and Russia. Some argue that the increased American interest is part of a much broader pattern, the one of preventing Russia's descent to the important path to the Mediterranean Sea, a plan that the Americans never tried to hide¹⁵¹. The supporting American energy interests in the region, and their attempt to stifle Russia's current energy dominance was expressed clearly by the US in Alexandroupolis¹⁵².

In the author's personal opinion for the time being whatever these plans include, the increased investment interest for the region will undoubtedly prove advantageous for the country. After a long period of financial crisis, and recession, Greece has gradually begun to comply with the reforms in the energy sector, which have started to produce the first faltering results, meaning gradually increased competition in the energy market, especially the one of natural Gas. Nevertheless, due to the lack of investments, mostly because of the weakness of the system to bear the costs, a few timid steps have been taken towards the integration of the market. Thus Greece must enhance the new investments coming from the private initiative, by offering to the sector incentives and a more secure regulatory framework. It is time for Greece to play the crucial role in the energy chessboard and this chance should not be squandered.

11. CONCLUSION

There is no doubt that Europe's economic development and prosperity depend on a continuing, stable and plentiful supply of energy. The ramp-up of new destination-flexible, hub-priced LNG supplies coming out of the United States is providing a catalyst for change in the global gas market, while promises security of supply, resilience and price flexibility. In order to be absorbed in the EU market, a well-

¹⁵¹ I. Mazis, *"The Rationale Of NATO Founding And N.J.Spykman' S Geopolitical Example"* (Regional Science Inquiry 2017)

¹⁵² US Ambassador, speech delivered at the "1st Oil & Gas Forum" in Alexandroupoli at 7th September 2017 [online] American-Hellenic Chamber of Commerce. Available at: <https://www.amcham.gr/wp-content/uploads/2017/oilgas/PYATT,%20GEOFFREY%20R.-US%20AMBASSADOR.pdf> [Accessed 2 Feb. 2019].

connected energy market with the appropriate infrastructure in combination with new technologies is a pivotal step. The FSRU's emerge as the most promising new infrastructures capable of restructuring the transportation of LNG, and offering "fast track" solution to countries that have access to the sea for diversification of their energy mix. Still, as even this cost effective solution remains non-affordable for the TSO's, the private sector is called to bear the cost. To mobilize private undertakings the regulatory framework, provide incentives to these projects, as far as their commercial exploitation is concerned. Namely, the investor could be granted an exemption from certain obligations laid down in Article 36 of Directive 2009/73/EC, among the most fundamental the TPA principle as the ownership unbundling regime by the NRA's and EU Commission. Given that competition could easily be stifled without the appropriate safeguards and monitor, practice shows that these exemptions should be exceptional and be limited to those investments whose realization is impossible under the TPA regime. The implementation of the necessity and proportionality principle should therefore be applied, as the goal must be to promote competition not to prevent it.

In the context of the promotion of competition, both with diversification and security of supply goal the Alexandroupolis FSRU emerges as a brilliant chance for the country and Southeastern Europe generally. It guarantees the security of supply through the diversification of the supply sources and supply routes. Moreover, the implementation of this project reinforces Greece's role in the energy chessboard, in a period that Greece faces a lot of financial but also geopolitical implications. This project concentrates all the prospects in order for Greece to overcome the crisis and from transit to become an energy trade hub country. Dr. Christopher Kullander argues that in markets, perception can alter reality¹⁵³ and it is time for Greece to exploit its potential.

¹⁵³ Dr. C. S. Kulander, *'European Energy Security, American LNG, and the global natural gas Marketplace'* (2017) vol. 3 Iss.4 Oil and Gas, Natural Resources, and Energy Journal.

BIBLIOGRAPHY

BOOKS

- Dralle, M. T. (2018) *“Exemptions from Unbundling”*. In: T. Tilman Michael, ed., *Ownership Unbundling and Related Measures in the EU Energy Sector Foundations, the Impact of WTO Law and Investment Protection*. 1st ed. Switzerland: Springer Nature, pp.54-60.
- Kotlowski, A. (2009). *‘ Access Rights to European Energy Networks – A Construction Site Revisited’*, *EU Energy Law and Policy Issues*. 2nd ed. Euroconfidentiel SA.
- Roggenkamp M., Barrera-Hernández L., Zillman D. N. and Guayo I. Del, (2012) ed., *“Energy Networks and the Law Innovative Solutions in Changing Market”*s, 1st ed. Oxford University Press, p.333.
- Panagos T. (2011), *“Unbundling of Transmission System and Transmission System Operator according the Third Energy Package”*. In: T. Panagos, ed., *Unbundling of energy companies (In Greek)*, 1st ed. Athens -Thessaloniki: Sakkoulas S.A, pp.147-149.
- Schröder M., Bettzüge M., and Wessels W., (2017) *“Turkey as an energy hub? Contributions on Turkey’s Role in EU Energy Supply”*. 1st ed. Baden -Baden: Nomos.
- Talus K., (2016) *“Introduction to EU energy law”* 1st ed. United Kingdom: Oxford University Press, pp.19-29.
- Talus K., (2014) *“EU Energy Law and Policy”*. Oxford: OUP Oxford.
- Talus K., (2013) *‘New Infrastructure’*, *EU Energy Law and Policy a Critical Account”*. 1st ed, Oxford University.
- Vijver van der T., (2012) *“Third Party Access Exemption Policy in the EU Gas and Electricity Sectors: Finding the Right Balance between Competition and Investments”*. In: M. M. ROGGENKAMP, L. BARRERA- HERNÁNDEZ, D. N. ZILLMAN and I. DEL GUAYO, ed., *“Energy Networks and the Law Innovative Solutions in Changing Markets”*, 1st ed. Oxford University Press, p.333.

ARTICLES –WORKING PAPERS

- Commission of the European Communities (2009). *'Commission Staff Working Document On Article 22 Of Directive 2003/55/EC Concerning Common Rules For The Internal Market In Natural Gas And Article 7 Of Regulation (EC) No 1228/2003 On Conditions For Access To The Network For Cross-Border Exchanges In Electricity–New Infrastructure Exemptions.* [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/sec_2009-642.pdf [Assessed at. 15.11.2018]
- Commission of the European Communities. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/sec_2009-642.pdf [Accessed 15.11. 2018].
- Commission of the European Communities, (2007). *'Commission Staff Working Document On Capacity Allocation And Congestion Management For Access To The Natural Gas Transmission Networks Regulated Under Article 5 Of Regulation (EC) No 1775/2005 On Conditions For Access To The Natural Gas Transmission Networks'*. [online] Available at: <http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2010825%202007%20INIT> [Accessed 22.12.2018].
- Energy Community Secretariat Opinion 1/2013 on the exemption of the “TAP” Interconnector from certain requirements under Directive 2009/73/EC by the Energy Regulatory Authority of Albania (ERE). (2013). Oil, Gas & Energy Law (OGEL), 14.8.2009,(No 211), p.p 94 et seq.
- Energy - European Commission. (n.d.). *Gas and oil supply routes - Energy - European Commission.* [online] Available at: <https://ec.europa.eu/energy/en/topics/imports-and-secure-supplies/gas-and-oil-supply-routes> [Accessed 31.1.2019].
- European Commission (2015), 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 (2015). “A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy” COM (2015) 80 final.

- European Commission (2015). 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 "*Clean Energy For All Europeans*". COM (2016) 860 final. [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/com_860_final.pdf [Accessed 22.9.2018].
- European Commission (2015). *Proposal for a Council Decision on the ratification and accession by Member States on behalf of the Union to the Protocol of 2010 to the International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea with the exception of aspects related to judicial cooperation in civil matters*, 22.6.2015 COM (2015) 304 final.
- European Commission (2016). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions "*On an EU strategy for liquefied natural gas and gas storage*". [on line] Brussels, 16.2.2016, COM (2016) 49 final. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/1_EN_ACT_part1_v10-1.pdf [Accessed 30.6.2018].
- European Commission, '*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*' (2014) [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/20140528_energy_security_study.pdf [Accessed 30.11.2018].
- European Commission Directorate-General for Energy, '*Pending Notifications of National Exemption Decisions*' (2018) [online] Available at https://ec.europa.eu/energy/sites/ener/files/documents/exemption_decisions2018.pdf [Accessed at 17.12.2018].
- European Regulators' Group for Electricity and Gas (2007). '*Guidelines for Good Practice on Open Season Procedures (GGPOS)*'. [online] Council of European Energy Regulators ASBL. Available at:

<https://www.entsog.eu/sites/default/files/entsog-migration/publications/incrementalcapacity/ERGEG%20Guidelines%20of%20Good%20Practice%20-%20Open%20Season%20Procedures%20%28GGPOS%29.pdf>

[Accessed 2.1.2019].

- Franza L., Linde, C. and Stapersma, P. (2018). *“Europe's Energy Relations. Between Legacy and Transformation”*. [online] Clingendael International Energy Programme (CIEP). Available at: http://www.clingendaelenergy.com/inc/upload/files/CIEP_Paper_2018-02_Web.pdf [Accessed 11.12.2018].
- A. D. Hauteclouque and K. Talus, 'Capacity to Compete: Recent trends in Access Regimes in Electricity and Natural Gas Networks' (European University Institute, Florence Robert Schuman Center for Advanced Studies Louola de Palacio Programmer on Energy Policy 2011) <<http://fsr.eui.eu/Documents/WorkingPapers/Energy/2011/WP201109.pdf>> [Accessed at 23.12.2018]
- Institute for Energy for South -East Europe (2018). *Gas Supply in SE Europe and the Key Role of LNG*. [online] Athens, December 2018: Institute of Energy for SE Europe (IENE). [online] Available at: <https://www.iene.gr/articlefiles/gas%20supply%20in%20se%20europe%20and%20the%20key%20role%20of%20lng%20test.pdf> [Accessed 30.1.2019].
- Institute of Energy for SE Europe (IENE) (2015). *The Vertical Corridor: From the Aegean to the Baltic*. [online] Athens. Available at: <https://www.iene.eu/articlefiles/the%20vertical%20corridor%20-%20from%20the%20aegean%20to%20the%20baltic.pdf> [Accessed 30.1.2019].
- Koska-Legiec, A. (2018). What is the Real Issue with Floating Storage and Regasification Units? Regulations Related to the FSRU Implementation Process in the Baltic Sea. *TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation*, 12(3), pp.499-503.
- Dr. Kulander C. S., (2017) 'European Energy Security, American LNG, and the global natural gas Marketplace' Vol. 3 Iss.4 Oil and Gas, Natural Resources, and Energy Journal.

- Lapuerta, C. and Moselle, B. (1999). '*Network Industries, Third Party Access and Competition Law in the European Union*'. *Northwestern Journal of International Law & Business*, 19(3).
- Maniatis G., '*Ten Priorities of National Energy Strategy*' *Greek Energy 2018*" [online] Available at <https://issuu.com/citroniogr/docs/greek_energy_2018> [Accessed at 26.6.2018].
- Mazis, I. (2017). "*The rationale of NATO founding and N.J.Spykman's geopolitical example*". *Regional Science Inquiry*.
- Molis, A. (2016). Towards a Regional Gas Market in the Baltic States: Political, Economic and Legal Aspects. *Humanities and Social Sciences Latvia*, 24(1, (Spring-Summer 2016).
- Note of DG Energy &Transport on Directives 2003/54-55 and Regulation 1228\03 in the electricity and gas Internal Market "*Exemptions from certain provisions of the Third Party Access Regime 30.1.2004. (2004)*". [e-book] Available at: http://www.rae.gr/old/europe/sub4/exemptions_tpa_DGTREN.pdf [Accessed 16.12.2018].
- Palaiogiannis, S. (2009). *The Fourth Corridor Gas Pipelines Perspectives, Uncertainties and Implications for SE Europe and Greece*. Working Paper No 10. [online] IENE, pp.16-18. Available at: https://www.iene.gr/articlefiles/wp_paleoyannis_no10%20final.pdf [Accessed 24.1.2019].
- Team Consult G.P.E GmbH (2017). '*A Glimpse at the Landscape of European LNG Regasification Infrastructure*'. [online] Available at: http://www.teamconsult.net/news/files/European_LNG_Regas_Infrastructure.pdf [Accessed 22.12.2018].
- The Oxford Institute for Energy Studies (2017). '*The Outlook for Floating Storage and Regasification Units (FSRUs)*'. NG 123.
- TOKGÖZ, E. (2014). "*Third Party Access Regime and Building Competitive Gas Markets*". Institute for Energy Markets and Policies (EPPEN).
- T. Vijver van der. "*Exemptions to Third Party Access for New Infrastructures in The European Community Gas Sector - An Update*". *International Energy Law Review*.

[online] Available at: <http://International Energy Law Review 2009 Exemptions to third party access for new infrastructures in the European Community gas sector - an update Tjarda Van der Vijver> [Accessed 14 Nov. 2018].

LEGISLATION

- Decision No 178065/2018 of Ministry of Environment and Energy “*Natural Gas Licensing Regulation*”, (Official Government Gazette B’ 3430/17.8.2018. [in Greek]
- Decision No 78 of the Government Council of financial policy “*2017-2022 National Natural Gas Market Roadmap*”. Official Government Gazette B/59/18.1.2018.
- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC OJ L 211/94, 14.8.2009.
- Directive (EU) 2017/1132 of the European Parliament and of the Council of 14 June 2017 relating to certain aspects of company law OJ L 169/46, 30.6.2017
- Explanatory Report of Law 4001/2011 for the operation of Electricity and Gas Energy Markets, for Exploration, Production and transmission networks of Hydrocarbons and other provisions”. Official Government Gazette Issue A’ 179/22.8.2011.
- Greek Code of Private Maritime Law- Greek Law N. 3816/1958 Official Government Gazette Issue A’, 32/8.2.1958
- Hellenic Parliament (2008). *The Constitution of Greece As revised by the parliamentary resolution of May 27th 2008 of the VIII th Revisionary Parliament*. [online] Available at: <https://www.hellenicparliament.gr/UserFiles/f3c70a23-7696-49db-9148-f24dce6a27c8/001-156%20aggliko.pdf>
- *International Convention for the Prevention of Pollution from Ships (MARPOL) Adoption: 1973 (Convention), 1978 (1978 Protocol), 1997 (Protocol - Annex VI); Entry into force: 2 October 1983 (Annexes I and II).*
- *International Convention for the Safety of Life at Sea (SOLAS), 1974.*

- *International Convention for the Safety of Life at Sea (SOLAS), Adoption: 1 November 1974; Entry into force: 25 May 1980.*
- *International Convention on Liability and Compensation for Damage in connection with the carriage of Hazardous and Noxious Substances by Sea 2010 (2010 HNS CONVENTION) 1, 2.*
- Law 4001/2011: “*For the operation of Electricity and Gas Energy Markets, for Exploration, Production and transmission networks of Hydrocarbons and other provisions*”. Official Government Gazette Issue A’ 179/22.8.2011
- Law Degree 117/1974: concerning the designation as ships of some floating crafts and the application of such vessels to existing provisions. Official Government Gazette A’ 310/23.10.1974.
- *Offshore Pollution Liability Agreement (OPOL) (effective as of 21 June 2017).*
- *Regulation of Natural Gas Licensing No Δ1/A/5815, [in Greek]* Official Government Gazette Issue B’ 464/19.4.2010 [In Greek]
- *Regulation (EC) No 139/2004 of the European Council of the 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)* Official Journal, L24/1, 29.1.2004.
- Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross- border exchanges in electricity, Official Journal, L 176, 15.7.2003.
- Regulation (EC) No 1775/2005 of the European Parliament and of the council of 28 September 2005 on conditions for access to the natural gas transmission networks, Official Journal, L 289, and 3.11.2005.
- Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (ACER), Official Journal, L 211, 14.8.2009.
- Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003, Official Journal, L 211, 14.8.2009

- *Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 Official Journal, L211/36, 14.8.2009*
- *The United Nations Convention on the Law of the Sea UNCLOS 1982*
- The Treaty on the Functioning of The European Union [on line] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT&from=EN> [Assessed at 30.12.2018]

CASES

- *Case AT39317 – EON Gas [2010] European Commission [online] Available at <http://ec.europa.eu/competition/antitrust/cases/dec_docs/39317/39317_2139_3.pdf> [Accessed at 23.12.2018]*
- *Case COMP/B-1/37966 ñ Distrigaz [2007] (European Commission), p.8.*
- *Case COMP/39316 – Gaz de France [2009] Commission Decision of 31.2.2009, [online] Available at: <http://ec.europa.eu/competition/antitrust/cases/dec_docs/39316/39316_2298_1.pdf> [Accessed at 23.12.2018]*
- *Commission amendment request in the BBL case of July 12, 2005, [online] Available at http://ec.europa.eu/energy/gas/infrastructure/doc/bbl_decision_ec.pdf [Accessed at 23.12.2018]*
- *Commissions' exemption decision of Dutch LNG terminal GATE, [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/2007_gate_terminal_decision_en.pdf> [Assessed at 4.1.2019]*
- *Commission's exemption decision of Eemshaven LNG –terminal, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2009_eemshaven_decision_en.pdf [Assessed at 23.12.2018]*
- *Commission's exemption decision of the "Gazelle" interconnector, [online] Available at:*

https://ec.europa.eu/energy/sites/ener/files/documents/2011_gazelle_decision_en.pdf [Assessed at. 3.1.2019].

- Commission's exemption decision of Interconnector Greece-Bulgaria, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2018_igb_decision_en.pdf [Assessed at.23.12.2018]
- Commission's exemption decision of Nabucco pipeline, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2013_nabucco_decision_austria_en.pdf [Assessed at 3.1.2019]
- Commission's February 2009 exemption decision on OPAL case, amended I 2016 with Commission Decision on review of the exemption of the Ostseepipeline - Anbindungsleitung from the requirements on third party access and tariff regulation granted under Directive 2003/55/EC (the "OPAL Decision"), C (2016) 6950 Final, 28.10.2016.
- Commission's decision in TAP exemption from TPA requirements, issued in Brussels, 16.5.2013 [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2013_tap_decision_en.pdf [Accessed 22.12.2018]
- Commission's exemption decision on Shannon LNG terminal, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2010_shannon_decision_en.pdf [Assessed at. 30.12.2018]
- Commissions' exemption decision of LNG terminal to Olt Offshore Toscana S.p.A, [online] Available at: <http://ec.europa.eu/transparency/regdoc/rep/3/2015/EN/3-2015-72-EN-F1-1.PDF> [Accessed at 3.1.2019]
- Commission's exemption decision of LNG Terminal in Porto Empedocle, Italy, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2012_porto_empedocle_decision_en.pdf [Accessed at 3.1.2019]

- Commission's exemption decision exemption of an Underground Gas Storage Facility in Dambořice, Czech Republic, [online] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2011_damborice_decision_en.pdf [Assessed at 3.1.2019]
- Commission's exemption decision on Rovigo Brindisi terminal [online] [in italian] Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2005_rovigo_decision_it.pdf [Assessed at 24.12.2018]
- *United Brands Company and United Brands Continentaal BV v Commission of the European Communities Chiquita Bananas* [1978] European Court Reports 1978 - 00207 Case 27/76 (European Court Of Justice).

MISCELANEOUS

- AGL (2017). *Fact sheet Floating Storage and Regasification Units*.
- American Bureau of Shipping Incorporated by Act of Legislature of the State of New York 1862 (2018). *Guide for building and Classing LNG Regasification Vessels*. April 2017 (Updated May 2018. Houston, USA: American Bureau of Shipping.
- American-Hellenic Chamber of Commerce (2017). In: 1st Oil & Gas Forum. [online]. Available at: <https://www.amcham.gr/wp-content/uploads/2017/oilgas/PYATT,%20GEOFFREY%20R.-US%20AMBASSADOR.pdf> [Accessed 2.2.2019].
- American-Hellenic Chamber of Commerce, (2018). In: *The Southeast Europe Energy Forum*. [online] Hellenic Association for Energy Economics (HAEE). Available at: <https://www.haee.gr/events/international-events/2018/southeast-europe-energy-forum/proceedings/> [Accessed 31.1.2019].
- BP (2018). *'BP Statistical Review of World Energy 2018*. [online] Available at: <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf> [Accessed 30.11.2018].
- Bulgarian Energy Holding (2018). "Cooperation between DEPA, BEH and GASTRADE to promote the commercial operation of the "LNG Terminal in Northern

- Greece” in Alexandroupolis”. [online] Available at: <https://www.bgenh.com/en/posts/56/Cooperation-between-DEPA-BEH-and-GASTRADE-to-promote-the-commercial-operation-of-the-%E2%80%9CLNG-Terminal-in-Northern-Greece%E2%80%9D-in-Alexandroupolis.html> [Assessed at 24.1.2019]
- Copelouzos.gr. (n.d.). *Copelouzos: ΦΥΣΙΚΟ ΑΕΠΙΟ*. [online] Available at: <http://www.copelouzos.gr/naturalGas/> [Accessed 1.2.2019].
 - Ec.europa.eu. (2019). *European Commission*. [online] Available at: http://ec.europa.eu/energy/maps/pci_fiches/pci_6_9_1_en_2017.pdf [Accessed 22.1.2019].
 - European Union (2018). *EU Energy in Figures Statistical Pocketbook 2018*. EU Publications.
 - European Commission, 'EU-U.S. Joint Statement of 25 July: European Union Imports of U.S. Liquefied Natural Gas (LNG) are on the rise' Brussels, 9 August 2018' (2018) <<https://ec.europa.eu/energy/en/news/eu-us-joint-statement-25-july-european-union-imports-us-liquefied-natural-gas-lng-are-rise>> [Accessed 22.11.2018]
 - Gaslogltd.com [online], On The Water Fleet. Available at: <https://www.gaslogltd.com/fleet-list/> [Assessed at. 24.1.2019]
 - Gastrade.gr. (2019). *Licenses*. [online] Available at: <http://www.gastrade.gr/en/alexandroupolis-ings/licenses.aspx> [Accessed 24.1.2019].
 - Gennimatas, Honorary Vice Chairman at European Investment Bank, P. (2008). *Energy and Policy in SE Europe and the World*. Pedio Publications.
 - Hellenic Gas Transmission System Operator S.A (2018). “Revithoussa welcomes the first US LNG cargo at the newly build 3rd tank. [online] Available at: <http://desfa.gr/en/press-center/press-releases/h-reby8oysa-ypodexetai-to-prwto-amerikaniko-fortio-yfa-sthn-3h-dejamenh> [Accessed 13.1. 2019].
 - International Gas Union (2018). *2018 World LNG Report*. [online] IGU. Available at: https://www.igu.org/sites/default/files/node-document-field_file/IGU_LNG_2018_0.pdf [Accessed 22.8. 2018].

- Komlev, S. (2011). Third Energy Package and its Impact on Gazprom Activities in Europe. [Speech].
- Rae.gr. Energy Regulatory Authority [in Greek] [online] Available at: http://www.rae.gr/site/categories_new/regirsty/gas/licenses/info1.csp?viewMode=normal [Accessed at 24.1.2019]
- Reuters (2018). Bulgaria launches gas hub feasibility study. [online] Available at: <https://www.reuters.com/article/bulgaria-gas-hub/bulgaria-launches-gas-hub-feasibility-study-idUSL8N1QW5VE> [Accessed 31.1. 2019].
- Rzayeva, G. (2017). Russian Gazprom Shows Renewed Interest in Greek Natural Gas Infrastructure. *Eurasia Daily Monitor*, [online] 14 (12). Available at: <https://jamestown.org/program/russian-gazprom-shows-renewed-interest-greek-natural-gas-infrastructure/> [Accessed 29.1.2019].
- Stambolis, K. (2017). *Turkey, Greece and Natural Gas. European Business Review*. [online] Available at: <http://www.europeanbusiness.gr/page.asp?pid=3417> [Accessed 30.1.2019].
- Wood Group (2017). Wood Group secures FEED for Alexandroupolis LNG project in Northern Greece. [online] Available at: <https://www.woodgroup.com/press/press-releases/2017/wood-group-secures-feed-for-alexandroupolis-Ing-project-in-northern-greece> [Assessed at 25.1.2019]